

The Spandrels of San Marcos? *On the Very Notion of Landscape Ferment as a Research Paradigm* *

FERMENTATION PROVIDES this volume's organizing motif. The claim is that the biochemical process of *fermentation* supplies an apt metaphor for understanding certain kinds of *landscape change*. The kinds of landscape change in question, fortuitously, are those widely thought to be frequently occasioned by commercial processes centered around the literal metabolic activity of microorganisms breaking down sugars to produce organic acids, gases, and (most famously) alcohol: the commercial production of beer, wine, spirits, cider, cheese, and related fermented products. But what makes this metaphor apt? In this chapter I offer a number of considerations germane to an evaluation of the “fermented landscapes” research paradigm—considerations to which readers may wish to remain alert as they study the chapters to follow, and as they digest the overall contribution made by this volume.

Specifically, I offer the following three-question sequence as a framework for assessing the merits of this research program:

- (1) First, we can ask: might “fermentation” refer to a distinctive kind of landscape change? (Or is it better understood simply as a synonym or metaphor for landscape change in general?)

If “yes,” we can proceed to ask ...

- (2) Is there any co-variance between the appearance of fermentation-centered industries (those centered on beer, wine, spirits, and the like) and the advent of fermentation-modeled landscape change? (Or do non-fermentation-centered industries frequently contribute to “landscape ferment” as well? And do fermentation-centered industries frequently contribute to “non-fermentation-modeled landscape change” too?)

If “yes,” we can then proceed to ask ...

- (3) Is there any particular reason *why* these sorts of industries might be associated (at rates greater than chance) with fermentation-modeled landscape change? (Or do we have here little more than happy linguistic coincidence?) And if so, is there any essential (or at least interesting and surprising) connection between *literal* (chemical and metabolic) fermentation and *metaphorical* (landscape) fermentation? (Or is this again just a matter of verbal happenstance?)

An affirmative answer to even just the first of these questions would seemingly offer some degree of vindication to the notion of landscape ferment as a research program. (Though this is not to imply that uniformly negative answers to these questions entail that the paradigm lacks any merit!) An affirmative answer to (1) would suggest that the research paradigm of Fermented Landscapes (hereafter ‘FL’) is *illuminating*; an affirmative answer to (2) would suggest that FL is *fruitful*; and a “yes” on (3) would suggest that FL is *probative*.

We shall explore each of these questions in somewhat more detail in what follows. First, though, it is worth taking a bit of space to develop—at least as a foil—the position of a skeptic who holds that

* To appear in *Fermented Landscapes: Lively Processes of Socio-environmental Transformation*, ed. Colleen C. Myles, University of Nebraska Press (2020).

the notion of “landscape ferment” fails to capture any meaningful phenomenon, or to otherwise advance our understanding in any helpful manner. The particular skeptical position I shall develop holds that the FL paradigm is simply an instance of what one might term “mere *spandrel* scholarship.” Appropriating a notion from evolutionary biology (where it was first expressed in Gould and Lewontin’s famous 1979 paper “The Spandrels of San Marco and the Panglossian Paradigm: A Critique of the Adaptationist Programme”), I classify as an *academic spandrel* any research paradigm or body of work that emerges as a byproduct of that familiar and altogether indispensable feature of human understanding and academic discourse: *metaphor*. So, before turning to a study of each of the three alternative hypotheses suggested by questions (1)-(3) above, let us begin by exploring this “null hypothesis.”

H₀: FL is “Mere Spandrel Scholarship”

In 1979, the biologists Stephen Jay Gould and Richard Lewontin adopted the architectural term “spandrel” to refer to phenotypic traits of organisms which, while not themselves evolutionarily adaptive, nevertheless genetically co-varied with other traits that *did* confer reproductive advantage, and which therefore *did* survive the process of natural selection. Spandrels, that is, are evolutionary *byproducts* of the process of natural selection. Furthermore, a spandrel retains its status as such even if and when that trait later proves adaptive (or, to use the term Gould and his colleague Elisabeth Vrba later coined for this very purpose, *exaptive*) for some other purpose.¹

In architecture, “spandrel” is the name for the solid surface occupying the space between the shoulders of adjoining arches and the ceiling or molding above, or the space between two arches or between an arch and a rectangular enclosure. Such surfaces (and other related architectural forms, such as pendentives) originated as necessary byproducts of essential design features responsive to fundamental architectural constraints—in the case of spandrels, the necessity of employing arches to support a dome. However, they later became architecturally “adaptive” in their own right, as they proved useful in supplying surfaces on which to engrave or paint iconography—typically (since spandrels are a prominent feature in Gothic cathedral architecture in particular) depictions of the saints, scenes from the Gospels, and related Christian imagery. (In a decision that lent their 1979 paper its title, Gould and Lewontin used the example of San Marco cathedral in Venice, the spandrels of which the reader can glimpse in Figure 2.1 [here](#).)

Gould and Lewontin co-opted the notion of spandrel from the field of architecture in the service of their critique of a then-prominent position in their own field: what they termed the “adaptationist programme.” Adaptationists, on the authors’ telling, tended to see any conceivable isolable trait of every organism as a fitness-enhancing adaptation. This unrestrained enthusiasm for “adaptationism” led many Anglophone evolutionary theorists² to see evidence of evolutionary optimization everywhere—much as we observe the Pollyannaish Pangloss in Voltaire’s *Candide* to mistakenly infer that the bridges of our noses were designed to hold up our spectacles. Classic examples of evolutionary spandrels (as discussed in, e.g., Gould [1997]) include “masculinized genitalia in female hyenas, exaptive use of an umbilicus as a brooding chamber by snails, the shoulder hump of the giant Irish deer, and several key features of human mentality.”³ These “key features of human mentality,” often cited in this regard by Gould and many other thinkers, include music and perhaps even language itself. (See, for example, the discussion in Buss et. al. [1998].)

So language itself may be an evolutionary spandrel. (Though for a dissenting perspective on the alleged “spandrel-ity” of language, readers might consult some of the work of Stephen Pinker: see,

¹ See Gould and Vrba [1982].

² The authors believed the error to be less pervasive among continental biologists.

³ This quotation comes from the abstract of Gould [1997].

e.g. Pinker and Bloom [1990] and Pinker and Jackendoff [2005].) Irrespective, though, of its evolutionary status—as either adaptation, exaptation, or (mere) spandrel—it nevertheless seems clear that language itself generates its own sort of spandrels. *Metaphor* provides one striking site of this possibility. Undoubtedly, the use of metaphor often helps to advance our understanding by, e.g., illuminating some facet of an issue or phenomenon, or by suggesting parallels between phenomena that otherwise appear to be quite disparate, and so on. But otherwise-illuminating metaphors often carry with them a surfeit of meaning—thereby offering enterprising authors ample opportunity to indulge their artistic abilities in exploiting, to the fullest degree, the literary possibilities contained within the metaphor. Like the architectural support structures of Gothic cathedrals—once upon a time aesthetically inert, but later recognized by enterprising artists as providing great artistic potential—certain metaphors offer to certain scholars a similar potential. In other words: just as medieval artists seized the opportunity to embellish the functionally- and structurally-necessary spandrels—exploiting a new platform for showcasing their craftsmanship—so also do some contemporary scholars seize the opportunity to exploit the full literary potential of what (in and of themselves) are useful metaphors. To demonstrate their technical and conceptual mastery, artists and scholars alike have appropriated devices that do indispensable “structural” work—whether with respect to the physical architecture of an edifice, or to the conceptual architecture of an argument or research program—and have mined them for all their artistic and literary worth.

It is important to note a relevant trichotomy that presents itself at this point. In evolutionary thought, a given trait may be regarded as either (i) what I shall term here “mere spandrel” (a byproduct of evolution: non-adaptive in its own right but “naturally selected” nevertheless, owing to its genetic association with an originally adaptive trait); (ii) an exaptive spandrel (a spandrel that is later drafted into some other use that *does* enhance reproductive fitness); or (iii) originally adaptive (that is, as having arisen as a stable feature of a population due to that trait’s having conferred genuinely adaptive advantage upon organisms possessing it). Thus, to label a trait a spandrel is *not* necessarily to condemn it for its disutility; it may well have proven exaptive. Matters stand likewise with respect to the notion of spandrels as applied to academic research programs. A paradigm or analytic framework may be (a) a “mere spandrel” (a byproduct of other (admittedly useful) research paradigms, which nevertheless fails to advance our understanding or knowledge in its own right); (b) exaptive (one which perhaps initially arose as a byproduct of some other research paradigm, but which later becomes autonomous and proves useful in its own right⁴); or (c) originally “adaptive” (that is, one that initially arose because it was productive of improved understanding and insight in its own right). The same moral should therefore be drawn with respect to the “spandrelity” of research programs, or of individual acts of scholarship: to demonstrate that a paradigm or paper originated as a sort of byproduct of a metaphor’s surplus meaning is manifestly *not* to judge it incapable of effecting genuine advances in our knowledge or understanding; it may in fact prove “cognitively exaptive.” To think otherwise is to commit the Genetic Fallacy, or the Fallacy of Origins: to draw (in the formulation of that fount of collective knowledge known as Wikipedia) a “conclusion that is based solely on someone’s or something’s history, origin, or source rather than its current meaning or context.”⁵ For now, we need not be concerned with the distinction between “adaptive” and “exaptive” research paradigms (whatever precisely such distinction might amount

⁴ It is tempting to view the birth of *computer science* in something like this light. Late 19th-Century and early 20th-Century advances in formal logic generated what arguably were spandrel-like meta-logical research programs dedicated to exploring the properties of, e.g., *decidability*, *provability*, and *completeness* as they applied to first-order formal systems. In the hands of thinkers like Gödel, Church, and Turing, these programs morphed into something that (especially when merged with concurrent advances in electronic circuitry) proved *exaptive* as the mathematical and logical foundations of computer science. If this view of matters is even tolerably accurate, just think how much the contemporary world has been shaped by academic spandrels!

⁵ https://en.wikipedia.org/wiki/Genetic_fallacy (accessed November 7, 2018)

to); we need only investigate that which distinguishes “mere spandrel” programs from those that are genuinely illuminating, fruitful, or probative.⁶

Some readers may here protest that I’ve gone too far. They may allege that the present invocation of “spandrel scholarship” is itself an instance of spandrel scholarship. By unpacking the full conceptual and literary potential latent in the notion of a *spandrel*—by excavating various layers of meaning first imbued to the notion when the contemporary evolutionary biologists appropriated the medieval cathedral architects’ term—am I not exemplifying precisely that which I seek to characterize? Perhaps so—in which case I reply: “All the better!” Our judgment as to the notion’s utility may be further aided by our assessment of its value in the present case.

But how to make this judgment? It is to that question we now turn. In this chapter’s remainder, I offer a number of alternative hypotheses readers might consider when judging whether (or to what extent) a metaphor-based research paradigm is—to continue with *my* organizing motif—more than mere spandrel.

H₁: FL Provides *Illumination*.

One way in which we might fail to reject our null hypothesis is if *ferment* serves as nothing more than an image of landscape change *tout court*—if “fermentation” is little more than a synonym for “landscape change.” So for now let us adopt as our first research question the first query posed in this chapter’s second paragraph: “(1) Might ‘fermentation’ refer to a distinctive kind of landscape change?”

If we judge the answer here to be “no,” then we are committed to regarding FL as mere academic spandrel. (Again: it is worth repeating that this is not necessarily to condemn it as lacking all utility. Perhaps there is considerable literary talent on display in this volume’s various efforts to play with this notion; maybe it has artistic value as a certain kind of academic or conceptual poetry.) If on the other hand we decide that the answer to this question is “yes,” then we have judged FL to be *illuminating*. That is, the metaphor that stands at its center may itself represent a taxonomic advance. If there are species of landscape change usefully conceptualized in terms of ferment, then it may well turn out that introducing this term into the academic literature draws scholars’ attention to a heretofore undiscovered (or at least under-appreciated) subset of landscape change. So how might we proceed in evaluating our first research question?

One way to test whether “fermentation” captures a distinctive subset of landscape change is to ask whether we can point to some form of (physical and/or sociocultural) landscape change that *cannot* be meaningfully or helpfully conceived in the image of fermentation. If not, then we’re not being directed to any particular *kind* of landscape change; we’re just learning that fermentation-centered industries often play a role in bringing about landscape change. In this regard, it is of course important to ask what other kinds of landscape change there even are. As a non-specialist in this regard, I can only propose a range of naïve alternatives drawn mainly from the vernacular of popular commentary: gentrification, industrialization, decay, restoration, urbanization, residential development, and the like. If these are even the right *sorts* of things to count as alternative models of landscape change, then it seems that “landscape ferment” might be a distinctive species of the wider genus.

Next, we need to ask what in particular distinguishes those episodes of landscape change modeled on *ferment* from these other varieties. One thought springs naturally to mind here. Taking our

⁶ Or, for those familiar with the term from Dennett [2006], we are interested in criteria distinguishing illuminating, fruitful, and probative research paradigms from investigations of *chmess*.

metaphor seriously—that is, focusing on the imagery suggested by having literal, metabolic ferment⁷ (as opposed to “ferment” in its broader, more generic sense of “agitation [or] excitement”⁸) serve as a model for landscape change—we’re apt to focus on the notion of “micro-agents” effecting a multitude of small-scale, “local” changes, the cumulative effect of which is to transform the local environment into something new. (And, perhaps, into something better and more exciting?) This might notably differ from, e.g., large-scale regional planning of the “top-down” variety—as we might observe with a residential subdivision. “Landscape ferment” may differ in systematic ways, too, from ordinary suburban sprawl, insofar as the former (but not the latter) involves micro-agents “consuming” the available “raw materials” of the local landscape, transforming those materials (and thereby that landscape), and as a result “secreting” a genuinely new, unified, and highly desirable byproduct—“wine country,” say, or an “urban beer trail.” Whereas with ordinary suburban sprawl, what results is not unified or “consumable”—as are, e.g., wine country viewsheds and other “consumable landscape” tourist destinations—but rather diffuse and undifferentiated. (Chapters 2 and 3 of the present volume include some case studies illustrating how various geographic regions have successfully (or, in the case of the Canterbury Plains region of New Zealand, unsuccessfully) manifested such “bottom-up place-making” dynamics.)

Thus, if the phrase is helpful in capturing a distinctive subset of landscape change, then the metaphor (and the associated research paradigm) may prove *illuminating*. But this may seem especially so if the advent of fermentation-based industry tends to be *linked* to the phenomenon of fermentation-modeled rural and/or urban development—that is, if there appears to be co-variance between the phenomena! Thus it is to this next alternative hypothesis—that suggested by question (2) from our second paragraph—that we now turn.

H₂: FL is *Fruitful*.

Another way in which we might reject our null hypothesis is if the phrase “fermented landscapes” points to some robust relationship between fermentation-centered industries and fermentation-modeled landscape change. So let us now adopt as our second research question the second query posed above: “(2) Is there any co-variance between the appearance of fermentation-centered industries (those centered on beer, wine, spirits, and the like) and the advent of fermentation-modeled landscape change? (Or do non-fermentation-centered industries frequently contribute to ‘landscape ferment’ as well? And do fermentation-centered industries frequently contribute to ‘non-fermentation-modeled landscape change’ too?)”

If we answer this question in the negative, we’ve decided that FL—while illuminating—fails to be *fruitful*. That is: in classifying types of landscape change, “fermentation” captures a distinct category—it just turns out that this category of landscape change isn’t only or always (or even often) associated with industries of ferment. If we answer this question in the affirmative, though, we’ve seemingly identified a fruitful avenue for further exploration and investigation. That is: we will have discovered (to anticipate our subsequent discussion) reason to proceed to our third research question, and to our third alternative hypothesis: theorizing as to *why* such a connection obtains.

⁷ It’s worth noting that what we take to be the “literal” sense of “metabolic ferment” is, unsurprisingly, historically contingent. For a nuanced discussion of how our current understanding of fermentation is in fact historically conditioned in all sorts of interesting ways, see Andy Murray’s contribution in chapter 13 of the present volume.

⁸ To quote the word’s second entry at dictionary.com (the online dictionary first elucidates the organic chemist’s current sense of the term).

Ascertaining the strength of the co-variance between the proliferation of commercial enterprises centered on fermented goods (what I shall term “commercial ferment” for short) and *landscape ferment* is principally an empirical matter, requiring careful definition, diligent observation and data-collection, and statistical acumen. Accordingly, it likely falls outside the scope of the present volume and its individual contributions, the purpose of which is primarily to lay the groundwork and indicate some promising directions for future research.⁹ Enthusiastic empirical investigators studying this volume, though, might find its contents sufficiently illuminating and suggestive that they may be inspired to formulate research projects and secure grant money to explore further the full extent of the hypothesized connection. Until such time as those studies are completed, we might have to simply offer a promissory note: “further investigation is required” before we can determine whether there is a robust statistical correlation between the two.

But the previous paragraph also points toward another sense of “fruitfulness” relevant here: the FL paradigm may serve to unify seemingly disparate strands of scholarship, revealing otherwise-unrelated research programs to be connected in surprising and fruitful ways. The discovery of such connections, too, may prove generative of further research, as might the creative prompt of the very notion of “landscape ferment” itself. In many ways, we might hope to evaluate the paradigm’s *fruitfulness* via the merits of the present volume’s contents. And indeed, the very diversity and wide-ranging-ness of the contributions assembled within these pages seems indicative—at least as a first approximation—of FL’s fecundity!

It may be worth noting that there are (at least) two different ways in which researchers may conclude that there is a less-than-fully-robust co-variance between episodes of commercial ferment and landscape ferment. The first is if they uncover a paucity of co-occurrence. Suppose it turns out that—once the notion of “landscape ferment” becomes suitably operationalized so that it can be studied and measured—researchers discover that instances of landscape fermentation only rarely accompany localized outbreaks of fermentation-centered commercial activity. In that case, we may have no choice but to demur at the suggestion of the paradigm’s *fruitfulness* on account of this observed paucity. Alternatively, researchers may soon discover an abundance, rather than a dearth, of such co-occurrences—though only because there is an abundance of landscape fermentation in general. Suppose it turns out that landscape ferment frequently arises in response to a wide and diverse array of commercial enterprises—as well as, perhaps, in response to other sorts of non-commercial stimuli. If the causal antecedents of landscape ferment prove too heterogeneous, the notion may lose much of its fruitfulness as a lens for studying fermentation-centered-industry-driven landscape change. (Though it may not lose all of its fruitfulness in this regard: presumably it would still be an interesting question as to why fermentation-centered industries are disproportionately associated with fermentation-modeled landscape change, rather than, e.g., suburban sprawl.)

In any event: supposing for the moment that we concur as to FL’s fecundity, let us proceed to our third alternative hypothesis—that suggested by question (3) from our second paragraph—regarding the paradigm’s explanatory power.

H₃: FL Has *Explanatory Power*

One further way in which we might reject our null hypothesis is if the notion of ferment plays any useful role in explaining the (possibly) observed co-variance between fermentation-centered commercial activity and fermentation-modeled landscape change (as investigated pursuant to H₂ above)—if it serves to *unify* these two usages (one literal, one metaphorical) of the word “ferment.” So let us now adopt as our third research question the third query posed above: “Is there any particular reason *why* these sorts of industries might be associated (at rates greater than chance) with

⁹ However, see chapter 5 of the present volume for interesting and substantive steps in this direction.

fermentation-modeled landscape change?” If we answer this question in the negative, we have decided that FL—while fruitful—is not *probative*: that what we have here is little more than happy linguistic coincidence. If we answer this question in the affirmative, however, we have judged that FL has actual explanatory power, insofar as it uncovers underlying mechanisms or relations linking these two forms of fermentation—or at very least, insofar as it renders sensible this observed relationship.

What is the strongest case one might make for the probative power of this metaphor? Here we might further develop the “micro-agents” analogy first suggested in our discussion of H₁ above: like the chemical process of fermentation, certain forms of landscape change occur as the aggregate of lots of (uncoordinated) “micro-changes,” performed by independent “micro-agents,” not operating under the auspices or direction of any one overarching or guiding (macro-)Agent of Change. Such evolutions in the local landscape are more likely to be driven by actors who understand themselves on the models of “small-scale,” “local,” and/or “micro-”producers. These days, at least, fermentation-centered enterprises disproportionately conceive of themselves in such fashion. (Consider the current enthusiasm for microbrews, small-batch brewing, “craft” beers (and wines and spirits), as pushback against the perceived conformity and homogeneity of “Big Beer” and “macro-brews,” etc.¹⁰) Given these trends in the in the beer/wine/spirits industry, and in the wider current culture (pun semi-intended), it would come as little surprise if fermentation-based enterprises should turn out to be at the heart of many prominent instances of fermentation-esque landscape change.

(Of course, this just raises a further question: is there any particular reason why the current mania for “local,” “craft,” and “micro” should obtain in the market for booze to an extent greater than it does in other markets? Is there any essential connection between the role of *fermentation* in these industries, and the aforementioned craze (which gives rise to the advent of so many “micro-actors” in this space)? The answer is almost certainly “No”—this is a contingent connection (as evidenced by the fact that similar crazes characterize other *non*-fermentation-centered markets—such as that for *food* more generally¹¹.)

So given what we already understand about current consumer trends surrounding fermented products, it should perhaps be unsurprising that we would observe the linkage at the center of the FL paradigm. But is *this* anything more than happy linguistic coincidence? Here, perhaps, we may have finally found the limits of our metaphor. I doubt very much that there is any essential (or interesting, or surprising) connection between *literal* (metabolic) fermentation and *metaphorical* (landscape) fermentation. As noted in the preceding footnote, there is no particular reason why we might expect “micro-agent pedigree” to be any more or less fashionable among consumers in the “fermentation space” than it is anywhere else. This appears to be simply a contingent connection characteristic of our current culture; only time will tell if it proves to be a stable, more-or-less permanent feature of consumer demand for fermented products, or just a momentary fad. Time will tell, that is, whether this fashion (like so many others) will someday soon recede, or whether it will (as fashions so often do) spread to *other* segments of the commercial marketplace as well—such that someday we may observe landscape ferment to be widely effected by increased commercial activity in the (small-batch) *garment* industry, or in the (micro) *pharmaceutical* industry, or in the (artisanal) *publishing* industry, or in the (craft) *bicycle* industry, and so forth.

¹⁰ The nature and extent of this enthusiasm are further analyzed and documented in chapter 2 of the present volume.

¹¹ Though it is an interesting further question as to why we observe this feature of consumer demand so prominently in the market for *food* (including, of course, drink) but not in other places. Why is there no comparable mania for “locally-sourced,” “small-batch,” or “micro-” versions of, e.g., medicine, furniture, clothing, or consumer electronics? (Cf. Myles and Baltzly [2018].)

Conclusion

Having raised these three questions for the reader's consideration, I shall now hazard my own tentative answers—though, I hasten to add, not in any particular effort to persuade readers to share my answers. With respect to questions (1)-(3) as articulated in this chapter's second paragraph, I suspect that we might answer:

1. **Yes.** It seems quite plausible that we can and should contrast “landscape ferment” with, e.g., industrialization, residential development, urban sprawl, and the like. Accordingly, one interesting question for geographers and urban planners to ponder in this regard is the following: is gentrification best understood as a species of (urban) “landscape ferment”?
2. **I do not know.** Answering this question lies outside my academic expertise; professional geographers will have to guide me here. If they convince me, however, that there is in fact a correlation between episodes of *commercial* and *landscape* ferment, I think I'd know how to answer the next question.
3. **Yes,** with respect to the first part of the question. Consider the “micro-agents” analogy: biochemical fermentation results from the aggregate effect of the uncoordinated “consumptive behaviors” of large numbers of “micro-agents.” Matters stand likewise with landscape ferment, which typically transpires un-guided and un-envisioned by any overarching “macro-agent.” The analogs of yeast and bacteria in this case are the commercial enterprises *self-consciously* styled as “small,” “family,” “craft,” and “local.” But with respect to the latter part of the question, the answer seems to be **No.** It strikes me at this point that we have here merely a verbal parallel. As we just observed, the taste or fashion for “small/craft/family/local” varieties of a product can arise with respect to practically *any* industry; there's nothing unique about fermentation-centered enterprises in this regard.

We have arrived at last at the skeptical challenge implied (if not outright articulated) in our titular question: are the contributions to this volume equivalent to the (academic) spandrels of San Marcos (Texas)? (San Marcos is the home to Texas State University—a fine institution (says this biased observer) whose scholars are heavily represented within these pages.) Is the “fermented landscape” paradigm merely the by-product of a metaphor—simply a canvas upon which enterprising scholars of food, drink, and/or landscape can exhibit their conceptual dexterity?

This reader answers with a fairly confident “no”: the contributions to this volume *do* constitute a legitimate and coherent research paradigm. The fact that it arises from the exploitation of a fortunate verbal parallel (between the applications of two ordinary senses of the English word “ferment”) does nothing to detract from the paradigm's *illuminating*, *fruitful*, and *probative* properties. To press the analogy with the evolutionary biologist's sense of “spandrel” a bit too far, perhaps, we might say that *landscape ferment* is neither (mere) spandrel nor (merely) exaptive; it is, rather, fully “adaptive” in its own right. Whatever the precise etiology of the particular linguistic “mutation” at the heart of this paradigm—someone somewhere coined the *bon mot* of “fermented landscapes,” and a research program was born—the paradigm borne of this mutation has immediately proven to be adaptive in its own right ... as I believe the contents of the present volume amply demonstrate.¹²

¹² Readers interested in the wider application of evolutionary concepts as metaphors or analogies for understanding the fates and fortunes of research paradigms are invited to consult the seminal discussion of *memes* (in the original meaning of that term) in Dawkins [1976]. Dawkins offers an illuminating discussion of the ways in which *ideas* (and phrases, and fashions, and paradigms, and other cultural artifacts) can themselves be understood on the parallel with genes—as “units of selection” whose survival and proliferation is proportional to their cultural or intellectual adaptiveness. According to Wikipedia's entry on “memes,” this notion that ideas and fashions are subject to the same selective pressures as are genes is not original with

Ultimately, however, it is not *this* reader's judgment that concerns me most. The titular question is one readers must answer for themselves—*you*, and all your colleagues and students who are also studying this volume. I simply hope to have provided you a helpful framework for thinking these matters through as you read the coming chapters.¹³

Dawkins, but was discussed even during Darwin's day. T.H. Huxley is quoted there as writing in 1880 that "The struggle for existence holds as much in the intellectual as in the physical world. A theory is a species of thinking, and its right to exist is coextensive with its power of resisting extinction by its rivals."

¹³ For formative conversations on the very notion of "spandrel scholarship," I am grateful to Bob Fischer and Anthony Cross, both of Texas State University's philosophy department. (I am not sure, however, whether either Bob or Anthony would endorse the use to which I've subsequently deployed the notion!)

References

- Buss, David M. *et. al.* [1998]. “Adaptations, Exaptations, and Spandrels.” *American Psychologist* 53(3): 533-48. ([Link](#))
- Dawkins, Richard [1976]. *The Selfish Gene*. New York: Oxford University Press, 1976.
- Dennett, Daniel C. [2006]. “Higher-order Truths About Chess.” *Topoi* 2006: 39-41.
- Gould, Stephen Jay [1997]. “The Exaptive Excellence of Spandrels as a Term and Prototype.” *Proceedings of the National Academy of Sciences* Sep 1997, 94 (20) ([Link](#))
- Gould, Stephen Jay, and Richard Lewontin [1979]. “The Spandrels of San Marco: A Critique of the Adaptationist Programme.” *Proceedings of the Royal Society of London. Series B, Biological Sciences*, Vol. 205, No. 1151 (581-98).
- Gould, Stephen Jay, and Elisabeth S. Vrba [1982]. “Exaptation: A Missing Term in the Science of Form.” *Paleobiology* 8(1): 4-15. ([Link](#))
- Myles, Colleen C., and Vaughn Baltzly [2018]. “Why *Food*, Though?” *Exploring Ethics Through Food Choices* (fourth biennial Perugia Food and Sustainability Studies Conference). The Umbra Institute, Perugia, Italy, June 7-10, 2018.
- Pinker, Stephen, and Paul Bloom [1990]. “Natural Language and Natural Selection.” *Behavioral and Brain Sciences* 13 (4): 707-784. ([Link](#))
- Pinker, Stephen, and Ray Jackendoff [2005]. “The Faculty of Language: What’s Special About It?” *Cognition* 95(2): 201-36. ([Link](#))