

INTRODUCTION

Why *Terroir* Matters

Does the world really need another *terroir* book? Of course it does.

The notion of *terroir* is at the heart of what makes wine special. No other foodstuff, no other agricultural commodity, grips the human imagination with such immeasurable force as a great wine from a great winegrowing area. When you taste a great wine it seems inevitable that a connection exists between those inimitable flavors and the particulars of that place—the soil, the climate, the elevation, the aspect, the parcel’s unique position on the hill or in the vale. No other connection between food and place has inspired as extensive a body of literature as the earthly link in wine. Many agricultural products exhibit some degree of regional and sub-species variation, but since wine involves a dramatic transformation of raw grapes through fermentation, the lingering pedigree of origin is all the more remarkable. Wine is unique, and *terroir* is the reason. The Greeks and Romans had wine gods; there is no record of any deity responsible for, say, Vidalia onions, tasty as they are.

All over Europe, a rudimentary sense of *terroir*, a belief in the direct connection between soil, climate, and wine, was the conventional wisdom among growers for millennia. This instinctive, pre-scientific association of place and taste underwent considerable refinement before it emerged as the modern concept of *terroir* in the late nineteenth and early twentieth centuries. But in its earlier, inchoate form, the belief that dirt controlled wine’s destiny was widespread, elemental, and obvious, no more remarkable than the daily rise of the sun in the east. There are books about winegrowing and winemaking dating back centuries, but in all that literature, only fleeting passages focus on *terroir*.

That changed dramatically in the middle of the twentieth century, when New World wine regions—Australia, California, Chile—began to produce wines of undisputed quality from vineyards that had no established *terroir* credentials. Modern winemaking seemed more important than the traditions derived from ancient terrain, and many New World winemakers, researchers, and writers dismissed *terroir* as a marketing ploy, a fuzzy French philosophical concept, even an excuse for poor hygiene. Once *terroir* came under attack, its defenders took up their pens, typewriters, computers, blog posts and decanters with a vengeance, both in the Old World and the New. The world of wine is now awash in talk of *terroir*, some of it inspiring and substantive, some of it fanciful or downright loopy.

In recent years, the notion of *terroir* has been applied far beyond wine (see chapter 2), with some justification. Certainly there are pronounced variations in cheeses and their molds, breads and their starters, even breeds of livestock and their favorite feeds or pasturage. But again, wine is special, in large part because wine grapes are special. No other raw fruit or vegetable has a flavor chemistry as complex as *Vitis vinifera* (though tea leaves may come close), with hundreds of aromatic compounds or their precursors present in varying degrees and limitless combinations. This cornucopia of chemistry means that wine grapes and wine are uniquely suited to register and reflect subtle, nuanced differences in the natural environments where they develop. It's why wine vintages vary far more widely than potato vintages, and why we can taste the difference between neighboring vineyards.

The dance of wine flavor chemistry is one of the many ways that the application of science intersects with the romance of *terroir*. It's true that a scientific approach casts doubt on certain *terroir* claims—like the idea of literally tasting the vineyard in the glass—and that, we think, is useful conceptual demolition work. But it's also true that many positive insights into the workings of *terroir* have come from science-based research projects. If *terroir* is real, and we think it is, then it is helpful that it exist not only as a vague entity in certain vineyards, or solely as a philosophical concept, but as a provable, measurable phenomenon.

At any rate, our goal in compiling this volume is to put all of these approaches between one set of covers. We think that placing a literary-minded Burgundophile like Matt Kramer and a climate prognosticator like Greg Jones side by side, so to speak, is all to the good; the observations of a wine-loving petroleum geologist like James Wilson are inevitably enhanced when read alongside those of a wine country *evocateur* like Gerald Asher.

We chose the vehicle of an annotated reader for several reasons. The first is humility: neither of us has done extensive original research, nor written classic essays on the subject. But we are confident that, having both spent years thinking about wine in general and this topic in particular, we know enough to identify the good stuff. Rather than simply giving footnote credit to the people who have set the standards for digging into *terroir*, we let them have their say directly. Some of the excerpts come from landmark publications, like Matt Kramer's advocacy of "somewhereness," Gerard Seguin's work on soil hydraulics, and Ann Noble's application of modern methods of sensory analysis to the wines of Bordeaux; some are lesser known, but equally on point.

As you will quickly see, the authors we reprint do not all agree with each other, and since they started these fights, we let them square off in their own words. You will also discover that we are not shy in offering our opinions of their opinions along the way.

We suspect that our readers' attitudes about the subject of wine *terroir* will fall into one of four categories. One group knows deep in their bones that *terroir* is real; they have experienced it and tasted it and reveled in it, and they aren't in need of more explanation. They just want the next glass to reveal the wonders of its origins. A second group thinks the *terroir* effect is real, but that it can and should be understood scientifically, by analyzing vineyard geology and rainfall patterns and grapevine clonal DNA and applying rigorous sensory analytical methods. (The authors are in this camp.) A third group is just curious, intrigued by the concept or maybe by a great *terroir* story and wondering what it's all about. Finally, there are *terroir* skeptics—*terroir* deniers?—who think the whole concept is shot through with romanticism, sophistry, and foolishness.

All of these viewpoints are represented in this book, and all are challenged as well.

ORGANIZATION AND USE OF THIS BOOK

This reader starts with an immersion in the emotional power of the concept of *terroir*, conveyed by a series of masterful evocations of its beauty and meaning. If you ever wondered why all the fuss about *terroir*, chapter 1 is your answer. Chapter 2 surveys the history and evolution of the concept, from its ancient prehistory through up-to-the-minute formulations, including the transformation of the term *terroir* from put-down to high praise. Chapter 2 also tracks the concept of *terroir* as it's used to elucidate regional foodways, broader cultural patterns, and changes in social organization.

Chapter 3 examines the role of soil, which lies at the heart of the concept of *terroir*. Chapter 4 examines climate with the same rigor and detail. Chapter 5 looks at how viticulture and grape physiology impact our perception of *terroir*, a crucial element often left out of the discussion. Chapter 6 turns to winemaking, where we'll delve into both the dramatic transformation of juice to wine by microbes and yeasts and the indispensable human element in the equation.

Chapter 7 scrutinizes the sensory evidence for the reality of *terroir*, and discusses what more might be done to validate the concept perceptually. Chapter 8 investigates the marketing of *terroir*, which is at once necessary (if anyone outside your village is ever to know how great your wines are) and perilous (wherein you believe your own hype). Chapter 9 examines the prospects for the future of *terroir* in the light of climate change, heavy-handed winemaking, and global expansion of vineyard land, as amazing new growing areas are discovered every year.

Chapter 10 gives us a chance to summarize what we think has been established to date—and what has not—about the mechanisms and effects of *terroir*, and what new directions are worth pursuing.

We do not expect many people to sit down and read through this book cover to cover in rapt concentration. More likely, the self-contained chapters should provide food for thought, a chance to meditate on discrete aspects of *terroir*, whether the minutiae of soil composition or the perils of promotional hyperbole. To make certain scientific concepts of *terroir* more accessible, most chapters include explanatory sidebars. A comprehensive bibliography appears at the end of the book, offering the reader the opportunity to follow up on any of the individual fragments presented in the text.

We want to acknowledge up front that this reader, for all its breadth, has certain limitations. For example, despite an international array of authorship, we've included only readings available in English or English translation, even though the concept of *terroir* did not originate among English speakers. We are also painfully aware that the use of excerpts and sections of whole works can fail to convey the flow of the originals, and we encourage readers to consult the complete originals, all listed in the bibliography, for further enlightenment. Because many of the readings are partial excerpts, we have done some minor editing to reduce confusion—for example, eliminating references to figures that are not included. Footnotes are included where they appear in the original texts.

A note on usage, and a warning. In both scholarly and everyday contexts, the term '*terroir*' is employed in both a descriptive and a prescriptive sense, conveying either that a particular wine is *distinctive* because of its origins or that it is *better* than other wines because of those same origins. At the same time, *terroir* gets applied on multiple scales: to broad wine regions, to particular districts within regions, to single vineyards, or portions of vineyards. Thus, if someone says a certain wine truly shows off its *terroir*, the speaker may be referring to a wine typical of a region (even if the wine is inferior) or to a spectacular expression of a tiny parcel. These claims are markedly different. We make every reasonable attempt to make clear which usage is in play, but readers are well advised to keep track for themselves.

THESES ON *TERROIR*

Finally, as another form of overview, we present an outline of our own ideas on the subject, what might be called our Ten Theses on *Terroir*:

I. We believe the effects of *terroir* are real and undeniable: wines made from grapes grown in different places smell and taste different, vintage after vintage, to multiple, experienced, trustworthy tasters. This is true for both macro-climate regions—Alsatian Riesling is different from Austrian, from German, from Finger Lakesian—and for specific vineyards and sites.

II. We believe that many if not most of the standard depictions of this phenomenon, however, are worthy of skepticism—at least from the standpoint of modern science. Wine flavors and aromas, for example, do not come directly from the soil through passive plants

and into the glass intact; rather, they (or their precursors) are created inside the plants and berries and later during fermentation by yeast action. Vines remain mute as to their preference of whether they get their water through natural rainfall or drip irrigation, though they clearly respond to how much they get and when. And so it is unreasonable to argue that Old World dirt is somehow inherently superior to New World dirt.

III. We believe that for regional variations (macro-*terroirs*), climate and grape variety are both more important than soil; for vineyard variation, soil can be critical. New Zealand Sauvignon Blanc, for example, burst onto the international scene with a recognizable aromatic and flavor profile, clearly due to that country's cooler climate and winemaking proclivities. At least some of the perceived differences between bottlings within that climate zone reflect variations in soil structure and composition.

IV. Despite the obvious allure of that famous marketing trope, "Great wines are made in the vineyard," we wish to point out that great wine is in fact *never* made in the vineyard: it's made in the winery. As such, the human factor has to be included in any sensible view of the workings of *terroir*. Likewise, we feel it is necessary to factor in culture as part of the array of *terroir* elements a wine might possess, including the gastronomic and culinary milieu within which the wine has accrued its traditional cultural meaning and importance. Gaining an intimate knowledge of a wine's origin has a profound impact on how it tastes forever after.

V. Adding layers to the concept, however, inevitably creates tension and confusion as well. Limiting *terroir* to a discussion of dirt and place may be useful, even powerful, but it's clearly incomplete. When you add factors such as climate, traditional growing and winemaking practices, when you get humans into the act, you get a fuller picture—but you also generate controversies about *terroir*'s purest expression, and what the human element obscures. Maybe wine drinkers have to be included, too, since without a taster, there is no *goût du terroir*. It's easy to see that as components get included, *terroir* as a concept is in danger of becoming so broad it ends up meaning nothing at all. Balancing the power of the core concept with the complexities of actual winegrowing and winemaking is the challenge.

VI. A pair of observations that aren't strictly speaking, thesis statements, but need to be included in our initial salvo:

First, we note that two critical dimensions are almost entirely missing from standard discussions of *terroir*. First, despite millions of personal testimonials connecting a particular wine with a particular place, precious few rigorous sensory studies have been conducted, studies which, one would think, would validate the concept. If a sensory effect cannot be captured by careful sensory methods, we have a serious problem.

Second, we note that almost no attention has been paid to what the *vines* do, to the photosynthetic and physiological mechanisms that actually create the chemical

compounds behind the distinctive flavors and aromas of *terroir*-driven wines. Grapevines are not neutral transmitters of metaphysical essences; they are living flavor factories. Without a rigorous examination of these two elements, *terroir* will remain more an article of faith than a true window into the natural world.

VII. We believe that there is a legitimate debate about whether the concept of *terroir* can or should be evaluated through the methods of science. Some hold that the concept is essentially spiritual, that reducing it to soil chemistry and climate charts is what's wrong with the modern approach to winemaking and wine appreciation. Others believe that the emotional connection between a wine drinker, a place and its wines is more important than anything else. The notion of *terroir* clearly arose in a pre-scientific context. We think that while science is not the only lens to employ, the environmental causes and sensory consequences of *terroir* expression are tangible, material, and often measurable. The *terroir* debate can benefit from rigorous investigation: claims advanced as scientifically valid but which, in fact, are not, have to be challenged.

VIII. We believe that because the sensory attributes of great wines are the result of so many dynamic, constantly interacting processes—and because wine tasting is an inherently subjective experience—we are unlikely ever to be able to say, definitively, that wine 'X' has the unique quality 'Y' because of the factor 'Z.' Wine will never be that simple. *Terroir* expression is not a single thing—in one wine, it may be found in the mouthfeel, in another the aromatics—and the origins of distinctiveness may be due to many different factors. Thus the goal of exploring *terroir* is not to “explain” the properties found in a single bottle of wine, the way we might explain a lunar eclipse or a skin rash, but rather to understand more thoroughly how even minute variations in soil, climate, viticulture and winemaking can have real, perceptible and, yes, magical consequences.

IX. As long as the concept is overgrown with mythology, as long as crucial aspects of it go untended, as long as it is allowed to mean anything to anybody, we believe that *terroir* will be vulnerable to exploitation by marketing departments happy to claim whatever appeals to consumers or reinforces a branding initiative. We have no moral quarrel with industrial, mass-produced beverage wine, or self-caricaturing fruit-and-oak bombs, but they are not and will never be wines of place, whatever their back labels claim.

X. In summary, we believe that the concept of *terroir* needs a good housecleaning in order to defend it. Without scrutiny, standards, and common understanding, *terroir* can be easily dismissed, challenged, or distorted beyond recognition. We think the most compelling, elusive, defining quality of fine wine should not be threatened with a fate no good winemaker would tolerate in his or her wines: severe dilution.