THE MEASURING STICK OF REGULATORY TAKINGS: A BIOLOGICAL AND CULTURAL ANALYSIS

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I. INTRODUCTION

It was over seventy-five years ago that the concept of regulatory takings embedded itself into twentieth-century American jurisprudence against the backdrop of Pennsylvania’s anthracite coalfields.1 With Justice Holmes’ allusion to regulation of land that “goes too far,”2 scholars and jurists began their quest to define a workable takings formula.3 Following decades of largely unsuccessful attempts,4

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1 Pennsylvania Coal Co. v. Mahon, 260 U.S. 393 (1922) (striking down a prohibition against mining coal when private contract had expressly reserved such right).

2 Id. at 415.

the Supreme Court has in the past few years signaled its impatience with its traditional open-ended balancing approach and has indicated a desire to provide a more definite interpretation of the takings doctrine. In Lucas v. South Carolina Coastal Council, the Court held that a government regulation which leads to a total diminution in the value of a parcel constitutes a per se taking. This unprecedented and somewhat surprising decision of the Court again

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4 See e.g. Dolan v. City of Tigard, 512 U.S. 374 (1994) (finding a taking when there was no "essential nexus" between the regulation and the public use desired); Lucas v. South Carolina Coastal Council, 505 U.S. 1003 (1992) (holding that a deprivation of all viable economic use of land constitutes a taking per se); Nollan v. California Coastal Comm'n, 483 U.S. 825 (1987) (holding that while permits may be conditionally granted to fulfill a legitimate governmental purpose, such conditions may themselves amount to an impermissible taking); Keystone Bituminous Coal Ass'n v. DeBenedictis, 480 U.S. 470 (1987) (upholding a regulation against a claim that the affected segment of subsurface land should be considered separately from rest of parcel); Andrus v. Allard, 444 U.S. 51 (1979) (finding that a prohibition of the sale of eagle feathers was not a taking despite the fact that such regulation deprives the owner of the most valuable use of her property); Penn Central Transp. Co. v. New York, 438 U.S. 104 (1978) [hereinafter Penn Central] (upholding the application of a landmarks preservation law as applied to Grand Central Terminal in New York); Pennsylvania Coal Co. v. Mahon, 260 U.S. 393 (1922) (holding that regulations are takings if and only if they go "too far"); Hadacheck v. Sebastian, 239 U.S. 394 (1915) (upholding a regulation which prohibited the manufacture of bricks within specified limits of the city because the regulation was enacted in good faith to advance a legitimate state interest); Mugler v. Kansas, 123 U.S. 623 (1887) (holding that there is not a taking when the use of property is restricted to advance the health, morals, or safety of the public); Florida Rock Indus., Inc. v. United States, 791 F.2d 893 (Fed. Cir. 1986), cert. denied, 479 U.S. 1053 (Jan. 20, 1987) (No. 88-465), on remand to 21 Cl. Ct. 653 (1991) (acknowledging that a taking can result from regulation even if there is no physical invasion of property); Loveladies Harbor, Inc. v. United States, 15 Cl. Ct. 381 (1988) (denying motion for summary judgment by applying standard for takings that requires the loss of all economically viable use).


6 Huffenus, supra note 5, at 47.

7 505 U.S. 1003, 1029-30 (1992) (holding that "a regulation that declares 'off-limits' all economically productive or beneficial uses of land" is a taking).

8 Before the Court's decision in Lucas, many commentators shared the view that the Court was likely to fit its facts into the "nuisance exception" category of cases. See generally Raymond Coletta, The Trilogy That Failed, 2 CAL. LAND USE LAW AND POL'Y RPRTR. 4 (1992) (remarking that, "land use scholars became more convinced that the Supreme Court was determined to reframe the historic deference given to legislative regulation of landowners' use of their parcels"); Catherine R. Connors, Back to the Future: The Nuisance Exception to the Just Compensation Clause, 19 CAP. U.L. REV. 139 (1989) (analyzing the various ways the nuisance exception can be applied by the Court); Humbach, Evolving Thresholds of Nuisance and the Takings Clause, 18 COLUM. J. ENVT'L. L. 1, 3 (1993) (finding the Lucas decision to be a major analytical innovation).
brought into immediate focus the issue of how to define the unit of property against which economic impact is measured.9

The threshold issue of determining the relevant parcel for regulatory takings analysis is exceptionally complex. Adding to the confusion is the fact that the courts have been unwilling or incapable of directly confronting the issue.10 While most courts go through a lengthy analysis of takings jurisprudence, their determination of what constitutes a “relevant parcel” seems to be an almost visceral conclusion. This latter determination, however, is the proverbial “tail that wags the dog.” Unquestionably, the more narrowly the unit of parcel is defined, the more likely a finding of a taking becomes.

9 Differing approaches have been taken by the courts. Courts may consider a regulation’s effect on the parcel of land itself or may focus on the regulation’s effect on a right that they deem part of the ownership of property. See e.g. Keystone, 480 U.S. at 498 (holding 27 million tons of coal, constituting less than 2% of the petitioners’ coal, required to be kept in place to provide support for the overlying surface land did not constitute a separate parcel); Hodel v. Irving, 481 U.S. 704, 718 (1986) (discussing the right to devise a property interest); Loretto v. Teleprompter Manhattan CATV Corp., 458 U.S. 419, 438 n.16 (1982) (holding that 36 feet of cable one-half inch in diameter and two 4 x 4 x 4 metal boxes, about one-eighth of a cubic foot of space on the roof of appellant’s Manhattan apartment building was a separate parcel); Kaiser Aetna v. United States, 44 U.S. 164, 178 (1979) (discussing that the right to exclude the public from a dredged pond turned into a marina); Andrus, 444 U.S. at 65-66 (holding that “the denial of one traditional property right does not always amount to a taking. At least where an owner possesses a full ‘bundle’ of property rights, the destruction of one ‘strand’ of the bundle is not a taking, because the aggregate must be viewed in its entirety.”); Penn Central, 438 U.S. 104 (discussing a city block designated as a landmark site); Elsmere Park Club Ltd. v. Town of Elsmere, 771 F. Supp. 646, 647 (1991) (finding that 39 basement level units were an independent parcel in the Elsmere Park Apartments); Ciampitti v. United States, 22 Cl. Ct. 310, 313 (1991) (discussing takings treatment of approximately 45 total acres, about 14 of which were within state-designated wetlands); Jentgen v. U.S., 657 F.2d 1210 (Cl. Ct. 1981) (discussing 80 acres covered by applications, 60 of which were proposed for development and 20 of which were to be preserved in the natural state); American Dredging Co. v. New Jersey, 404 A.2d 42 (N.J. Super. Ct. App. Div. 1979) (viewing plaintiff’s 2500-acre tract in its entirety when determining whether restrictions on eighty acres prevented all use of the property).

10 See Schleich, supra note 3, at 395. Schleich states that:

The term ‘relevant parcel’ does not appear in most decisions involving takings claims. Typically, a court overlooks the problem of identifying the relevant parcel either because the affected parcel appears obvious to all parties, as in the case of a taking by eminent domain, or because the court makes unexplained assumptions about the dimensions of the parcel and then immediately shifts its attention to the economic analysis. (citation omitted)

Id. The Court has on occasion given a cursory look to the relevant parcel. See e.g. Pennsylvania Coal, 260 U.S. 393, 415 (1922) (holding that while property “may be regulated to a certain extent, if it goes too far will be recognized as a taking.”); Lucas, 505 U.S. at 1016-19 nn. 7-8 (reserving specifically the issue of defining the property interest); Gorieb v. Fox, 274 U.S. 603 (1927) (upholding a setback on the grounds that the property overall was usable); Humbach, supra note 3, at 799 (“Like Pennsylvania Coal, Gorieb does not discuss segmentation explicitly.”); see also Keystone, 480 U.S. at 497 (stating that a critical question is determining how to define the unit of property); Dolan v. City of Tigard, 512 U.S. 374, 400-402 (1994) (requiring analysis to focus on the impact of the city’s action on the entire parcel); Tabb Lakes, Inc. v. U.S., 26 Cl. Ct. 1534 (1992) (refusing to determine as a matter of law the definition of the whole parcel).
Conversely, the more expansive the definition of the relevant parcel, the less likely a finding of a regulatory taking becomes.\textsuperscript{11}

The contours of a workable definition of the takings' parcel have yet to be agreed upon. While this is an area where one would think that reasoned analysis and considered jurisprudence should dominate,\textsuperscript{12} in reality, significant barriers to a rational, policy-based solution exist. The American notion of property is deeply rooted in our biological predisposition and is outwardly molded by Judeo-Christian culture.\textsuperscript{13} Although we may view ourselves as a society of rational decision-makers, we remain significantly controlled by both our emotions and our limited range of perceptions, each system formed over eons of evolutionary development to ensure reproductive success\textsuperscript{14} in the face of various selective forces.\textsuperscript{15} The elevation in western societies of the rational person as the ideal is, to some extent, a product

\textsuperscript{11} The Court has on occasion broadly defined the parcel and subsequently not found a taking. See e.g. Penn Central, 438 U.S. at 130-1 (holding that the plaintiff cannot segment the property into air and surface rights); Ciampitti, 22 Cl. Ct. at 320 (concluding that there was not a taking of plaintiffs property and plaintiff had "treated all of Purchase 7, which encompasses virtually all the lots at issue, as a single parcel for purposes of purchasing and financing. It would be inappropriate to allow him now to sever the connection he forged when it assists in making a legal argument."). Examples also exist where courts have narrowly defined the parcel and have subsequently found a taking. See e.g. Pennsylvania Coal, 260 U.S. 393 (separating the surface estate from the mineral and support estate in assessing a takings claim); Florida Rock Indus. v. United States, 791 F.2d 893 (Fed. Cir. 1986) (identifying 98 acres of a 1,560 acre tract as a parcel for takings claim); Loveladies Harbor v. United States, 15 Cl. Ct. 381 (1988) (discussing 12.5 acres of a 250 acre tract in finding a taking).

\textsuperscript{12} Indeed, if this were the case, one would expect that a definition would have been agreed upon much earlier.

\textsuperscript{13} See infra notes 241-67 and accompanying text.

\textsuperscript{14} Characteristics of individuals that ensure reproductive success are much more likely to continue into later generations than characteristics that do not engender reproductive success. Adaptive traits increase in frequency in a population because their bearers contribute proportionally more offspring to succeeding generations. Our emotions are a highly evolved system that furthers the species in numerous ways. See generally DAVID BARASH, SOCIOBIOLOGY AND BEHAVIOR (1977) (arguing for the relevance of evolution to human social behavior); IRENAUS EIBL-EIBESFELDT, LOVE AND HATE (1971) (discussing biological bases for human emotions and social interactions); and EDWARD O. WILSON, ON HUMAN NATURE (1978) (applying population biology and evolutionary theory to human social organization).

\textsuperscript{15} Evolution is a theory describing why and how organisms change with the passage of time. Natural selection, first described by Charles Darwin, is the mechanism that forms the key to the evolutionary process. Individuals possessing characteristics which render them more capable of surviving and reproducing will be better represented in the next generation than individuals less fit. In essence, natural selection is the differential reproduction of individuals and their genes from one generation to the next. Reproduction-enhancing traits are "favored."

of mass self-deception.16 Humans simply are not purely rational actors, nor do they consistently make informed decisions in this regard. Although we might base our legislative and judicial decisions on supposedly “weighty” policy and jurisprudential analyses, in truth we remain prisoners of our biological-cultural heritage. This heritage influences how we view the world, and thereby colors our notions of what is right, just, or fair.17 Additionally, it provides a questionable foundation upon which to build our subsequent thought processes and jurisprudence.

Human evolutionary origins have also molded our perception of property. We are strikingly territorial, orienting ourselves spatially in the world, occupying and defending surface territories. This outward-directedness has fashioned a human territorial imperative that minimizes vertical significance while stressing horizontal value. The human emotional repertoire likewise emphasizes absoluteness and possessiveness as the species' characteristic property strategies.18 Strong feelings surround the sense of ownership and any attack on its inviolability generates visceral reactions at the expense of rational, unbiased inquiry. Feelings of stability, security and well-being mirror ownership; one's property "feels" like it should be one's individual domain.

These biological predispositions that drive how we view and relate to land are further intensified by the socio-economic culture of the United States. Our history of taming the wilderness and exploiting the natural contours of the environment19 reveals an economic orientation to the land. We have developed an individual braggadocio toward real property, focusing on the "my-ness" of land and its economic meaning to individual status. We exploit rather than conserve this valued resource. Private land ownership has gained an idiosyncratic American personality reflecting notions of economic power, individual self-meaning, and personal self-worth. Not surprisingly, where regulation leads to lessening land values, we feel unjustly compromised as well as personally devalued.

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17 An excellent collection of essays in this area is THE SENSE OF JUSTICE (1992) (Roger Masters and Margaret Gruter, eds.). These articles look at current scientific research into the bases of human nature and describe how our notions of justice and our moral values have developed.

18 See infra notes 251-66 and accompanying text.

Given our biological and cultural heritage, Americans begin the takings debate with an overwhelming prejudice in favor of private property rights. We perceive limitations on land use as a threat and are psychologically wired to presume any such limitation as a taking of a natural right. Indeed, the extraordinary emotions associated with takings cases reflect the underlying discord that is produced when our visceral conception of the property relation is altered by judicial or legislative act. The Holmesian "too-far" line may be the effective indicator of the outer limits of our basic property gestalt. If we are biologically and culturally predisposed to view land in a certain pre-defined way, these predispositions will necessarily influence our takings calculus.

The "diminution in value" test is an investigation into the definition of a relevant parcel. This Article will suggest that the determination of a relevant parcel is as much, if not more, a captive of our combined biology and culture as it is an analysis of relevant policy considerations. The spatially-horizontal orientation of humans dictates our emotional response to various severance issues. Because our passions are focused on the horizontal plane, we are lead to discount subconsciously value inherent in air and subsurface rights. This results in the relevant parcel being defined almost exclusively in terms of surface values. Likewise, our American cultural prejudices focus our attention on the economic gains or losses of the individual landowner. Our social learning has elevated the myth of the rugged individualist at the expense of moral tales exalting the norms of community responsibility and accountability. Where the economic consequence of regulation largely falls on the individual, we are predisposed to cry, "foul" and seek restitution.

It is, therefore, important to recognize our human and cultural limitations when addressing the takings issue. Only by recognizing the predispositions that we bring to the question can we more fully understand the force associated with, and the shortcomings inherent

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20 See infra notes 251-57 and accompanying text.
21 See infra notes 273-294 and accompanying text.
22 See infra notes 247 and accompanying text.
23 Notably, other legal systems stress the chain of duties associated with property ownership, rather than the American orientation of individual autonomy. See e.g., DOLZER, PROPERTY AND ENVIRONMENT: THE SOCIAL OBLIGATION INHERENT IN OWNERSHIP 17 (1976) (citing Article 14 of the Basic law of Germany). Section 2 states that "property entails obligations. Its use shall also serve the public good." Consequently, under German law, "individual sacrifice" may be demanded in order to protect the public good. Once a "potential social obligation" is established, the private landowner can no longer claim any vested interest in socially disruptive property rights. Id.

At the turn of the century in France, Leon Duguit attacked the Lockean individualistic concept of property. Duguit wrote, "Property is no longer the subjective right of the proprietor, but the social function of the holder of wealth." LEON DUGUIT, TRANSFORMATIONS DU DROIT FRANCAIS 158 (1912), as translated in CRIBBET, PRINCIPLES OF THE LAW OF PROPERTY 446 (2d ed. 1975).
in, our analytical arguments. Merely because we subconsciously cling to the notion of the inviolability of private property rights does not mean that logical arguments for a social understanding of property are less cogent or less right. Nor does the fact that such a social policy has logical coherence necessarily mean that it should be adopted in the face of strong human predispositions to the contrary. To ensure a full understanding of the appropriate standard for defining a relevant parcel, we must consider competing analytical positions against conceptions driven to the forefront by our basic human nature. Only by becoming aware of our evolutionary and cultural biases can we hope to adequately address the jurisprudential issue of the Holmesian “too-far” line.

The Supreme Court has yet to give any clear guidance on how to define the appropriate unit of property for regulatory takings analysis. Justices Rehnquist and Scalia seem to be pointing the current Court in the direction of narrowly defining the unit of parcel. Such

\[\text{\footnotesize See generally } \text{Lucas v. South Carolina Coastal Council, 505 U.S. 1003, 1019 (1992) (holding simply that "[w]hen the owner of real property has been called upon to sacrifice all economically beneficial uses . . . he has suffered a taking") (emphasis original); Keystone v. Bituminous Coal Ass'n v. DeBenedictis, 480 U.S. 470, 498-99 (1987) (explaining that there was no reason to treat petitioners' interest in less than 2% of coal as a separate parcel of property); Kaiser Aetna v. United States, 444 U.S. 164, 179-80 (1979) (holding that the right to exclude a fundamental element of property rights falls within this category of interests that the Government cannot take without compensation); Andrus v. Allard, 444 U.S. 51, 65-66 (1979) (explaining that the destruction of one strand in the bundle of rights is not a taking because the aggregate must be viewed in its entirety); The Court has also noted that:}\]

"Taking" jurisprudence does not divide a single parcel into discrete segments and attempt to determine whether rights in a particular segment have been entirely abrogated. In deciding whether a particular governmental action has effected a taking, this Court focuses rather both on the character of the action and on the nature and extent of the interference with rights in the parcel as a whole . . . .


\[\text{\footnotesize See e.g. Penn Central, 438 U.S. at 143 n.5. (Rehnquist, J., dissenting) (restating the view of United States v. Causby, 328 U.S. 256, 266 (1946), which held that air rights over an area of land are property for purposes of the Fifth Amendment). Rehnquist also noted that:}\]

[T]he term "property" as used in the Takings Clause includes the entire "group of rights inhering in the citizen's [ownership]." The term is not used in the "vulgar and untechnical sense of the physical thing with respect to which the citizen exercises rights recognized by law. [Instead, it] . . . denotes the group of rights inhering in the citizen's relation to the physical thing, as the right to possess, use and dispose of it. . . . The constitutional provision is addressed to every sort of interest the citizen may possess.”

Penn Central, 438 (quoting United States v. General Motors Corp., 323 U.S. 373, 377-378 (1945)) (emphasis and alteration in original).

See also Keystone, 480 U.S. at 512-515 (Rehnquist, C.J., dissenting) (noting that the Court should consider whether the value of the separate burdened segment of property had been totally extinguished or merely diminished). Rehnquist maintained that the restricted right to mine pillars of coal is a separate, completely extinguished property interest. Interference with a separate identifiable segment of property was sufficient to constitute a taking. Rehnquist also stated that the nuisance exception to the takings clause “is a narrow exception allowing the government to prevent 'a misuse or illegal use,' and it "is not intended to allow 'the prevention of a
a definition would lead to an exponential expansion of regulatory taking claims, yielding uncertain consequences for the environmental and preservationist movements. Such short-sighted and legally specious analysis furthers few jurisprudential goals while placing our natural environment at exceptional risk. Nonetheless, their jurisprudential arguments find great sympathy in the American consciousness, arguably less a testament to their analytical worth than to their appeal to human nature.

This Article primarily seeks to demonstrate the extraordinary "pull" of our biological proclivities and cultural alignment in addressing the issue of regulatory takings. Our resulting psychological orientation severely narrows our ability to address the issue logically and to analyze rationally in pursuit of an advantageous solution. Indeed, this Article will suggest that sound analysis necessitates that the unit of property be expansively defined. If this is done, Lucas's interpretation of Justice Holmes' "diminution in value" standard will increasingly become an interesting footnote rather than a major re-interpretation of regulatory takings jurisprudence. By recognizing the basic gestalt that we bring to our evaluation of this issue, we can more fully understand the cogency of the analytical arguments as well as the limitations of some of our sympathies. The prevention of

legal and essential use." Id. at 512 (quoting Curtin v. Benson, 222 U.S. 78, 86 (1911)). Justice Scalia went on to adopt this narrow view in Lucas when he stated that the nuisance exception would be controlled by state law. Lucas, 505 U.S. at 1028. "Justice Scalia's threshold inquiry is, in essence, a vehicle to determine whether the proscribed use fits Rehnquist's narrow construction of the nuisance exception." Glass, supra note 3, at 530.


Based upon his dissents in Keystone and Penn Central and his opinion in Lucas, it appears as though Rehnquist is pushing a narrow segmentation view of the relevant parcel. The ability of Scalia to garner a majority for this approach in Lucas suggests that the modern court may well have found a taking had it been presented the opportunity to consider both Keystone and Penn Central.

See Susan Rose-Ackerman, Against Ad Hocery: A Comment on Midhmam, 88 COLUM. L. REV. 1697, 1711 (1988) (arguing that the Court needs to develop a principled resolution to the takings question); Richard M. Frank, Inverse Condemnation Litigation in the 1990s — The Uncertain Legacy of the Supreme Court's Lucas and Yee Decisions, 43 WASH. U. J. URB. & CONTEMP. L. 85, 118 (1993) ("Takings jurisprudence was a muddle before the Supreme Court handed down Yee and Lucas, and a muddle it remains. In theory, the Supreme Court should provide clear guidance and direction to lower courts, litigants and the public regarding important constitutional questions."); See also Buck, supra note 3, at 1285 ("After more than seventy years, the Supreme Court continues to wander in its self-imposed maze when determining at what point government regulation of land use constitutes a compensable taking."); Id. at 1330 ("The greatest problem caused by the current muddle of takings jurisprudence in today's regulatory climate... is its uncertainty to owners and to planners and regulators."); Id. at 1331 ("The certainty derived from a per se model would protect an owner's investment-backed expectations and assist government planning decisions.").
conceptual severance and the inclusion of all originally purchased acreage and horizontally contiguous lots will ground takings jurisprudence in sound policy and advance our social order. Unfortunately, this orientation will also cause some core emotional discord since it is contrary to our inherent psychological order.

This Article will seek to uncover the depth of control that our biology and culture exert in this arena. Only by understanding our basic psychological orientation toward property can we hope to gain a clearer perception of the issues involved. Section Two of this Article will briefly describe the general historical background of how property is viewed for regulatory takings proposes. Section Three will analyze the major attempts that have been made at defining the relevant unit of property and evaluate the policies underlying these major jurisprudential positions. Section Three will consider the particular contributions that biological and cultural analyses can bring to an understanding of the issue as well as illustrate the extraordinary force and overwhelming bias these predispositions bring to the debate.

II. HISTORY OF THE MEASURING STICK

The controversy regarding definition of the relevant parcel has existed since the inception of regulatory takings doctrine. In large part, the problem of parcel identity is inexorably connected to the historical development of the takings issue. The sweeping regulatory powers enjoyed by governments at the turn of the century were based on a view of land ownership that accepted expansive police power and strong nuisance control. As land ownership increased in value and government regulation became more pervasive, there was renewed interest in developing limits to government’s regulatory power. *Pennsylvania Coal v. Mahon* marked the emergence of a

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29 *Cf. Mugler v. Kansas, 123 U.S. 623, 671 (1887)* (holding that a state can regulate alcohol without violating the constitutional guarantees of liberty and property).

29 *See Hadacheck v. Sebastian, 239 U.S. 394, 410 (1915)* (“There must be progress, and if in its march private interests are in the way they must yield to the good of the community.”).

30 *See e.g. Chicago & Alton R.R. Co. v. Tranbarger, 238 U.S. 67, 77 (1915)* (upholding a statute compelling railroad companies to construct and maintain suitable openings across rights of way and roadbeds in order to drain surface water and prevent flooding); *Reinman v. City of Little Rock, 237 U.S. 171, 176 (1915)* (upholding legislation regulating location of livery stables even though not nuisances per se, in circumstances the state could find they were nuisances in fact); *Omaechevarria v. Idaho, 246 U.S. 343, 352 (1918)* (upholding a statute that prohibited any person having charge of sheep from allowing them to graze on a range previously occupied by cattle); *Block v. Hirsh, 256 U.S. 135, 158 (1921)* (upholding a federal rent control statute that allowed tenants to remain in their apartments at a fixed rate of rent).

30 Throughout American history, land value and regulatory controls increased proportionately. There certainly exists a defined nexus between the two: order and function are often reflected in value. As resources become scarcer and the number of potential users becomes greater, the scope of regulation is increased to meet these new demands. While once scattered
formal regulatory takings doctrine and signaled changing judicial attitudes toward property ownership. Rather than concentrating on the magnitude of the public interest, the economics of ownership took center stage. Formulating and developing the takings issue in this manner necessitated a heightened focus for the unit of parcel in question. The extent of the diminution in the property’s use and value became one of the central measuring sticks that courts applied. But in order to calculate the economics of diminution, it was first necessary to determine the scope of what was being reduced.

A. Background of Regulatory Takings

In mid-nineteenth century America, courts were not besieged with challenges to government regulatory actions. Society simply accepted most of the imposed governmental regulations of land. Because the legislation was minimal and usually enhanced the value of the land involved, there was no perceived conflict between the governmental regulation and the American tradition of strong private property rights. Indeed, much of the relevant legislation was aimed at either nuisance abatement or conflict prevention — both goals which directly enhanced the value of landowners’ parcels. The Fifth Amendment’s Just Compensation Clause was applied mainly to straight-forward physical acquisitions, and even then often sparingly.

and infrequent regulation could be explained as a property maximizing event, increasingly pervasive regulation raises the specter of government intrusiveness. Government enhancement of the individual property right was seen as government interference with private property. See infra notes 35-46 and accompanying text.

260 U.S. 393 (1922).

See, e.g., Carol M. Rose, Mahon Reconstructed: Why the Takings Issue is Still a Muddle, 57 S. CAL. L REV. 561, 562 (1984) (arguing that Pennsylvania Coal “originated what has come to be known as the diminution in value test to determine whether there has been a taking of property.”); see also Euclid, 272 U.S. 365; Graham v. Estuary Properties, Inc., 399 So.2d 1374 (1981) (upholding land and water commission’s denial of proposed 1800 acre development upon finding the development would pollute wetlands); Kendall, supra note 3, at 570-75 (noting the Court’s increased rigor to the diminution in value test); Daniel Riesel & Steven Barshov, When Does Government Regulation Go “Too Far,” 111 A.L.I.-A.B.A. 889, 896 (1995) (“A government regulation which goes too far is not simply a denial of due process of law, the remedy for which is a declaration of invalidity. Rather such a regulation constitutes a taking of property for which just compensation must be paid.”).

Nuisance law is essentially a recognition of the need to limit individual property rights in specialized situations. Sic utero tuo reflects the notion that the imposition of restraints on individual parcel owners maximizes the worth of all parcels.

See Note, Taking Back Takings: A Coascan Approach to Regulation, 106 HARV. L. REV. 914, 917-918 (1993) (“Prior to Justice Holmes’ 1922 decision in Pennsylvania Coal, American courts rejected the idea of a regulatory taking. In medieval England, during the colonial era and through the first century of our Republic, the government generally paid compensation only for direct, physical appropriations. Regulations that served the public interest were exempt.”); Jed Rubenfeld, Uses, 102 YALE L.J. 1077, 1081 (1993) (“Most of the original American state constitutions contained no compensation clause, and uncompensated seizures of property for public
Within such a climate, judicial acceptance of land use regulation was not uncommon.\(^6\) This acceptance reached its zenith in \textit{Mugler v. Kansas}.

In a carefully tailored opinion by Justice Harlan, the Court ruled that the regulation of the manufacture and sale of intoxicating liquor was a legitimate exercise of the police power, notwithstanding the significant destruction of property value.\(^7\) Even though property was firmly linked to usage rights and individuals continued to see their land as their private kingdoms to exploit for their economic welfare, government action, reasonably taken for the public good, could legitimately and constitutionally "injure" private property interests. With \textit{Mugler}, the notion of government regulation as a taking of private property receded from the forefront of judicial consideration in takings cases. Justice Harlan wrote:

> The police power embraces regulations designed to promote the public convenience and general prosperity as well as the public health, safety, and morals. . . . The just compensation clause is not intended as a limit of the exercise of the police power necessary for the tranquillity of every well-ordered community or the orderly existence of government.\(^5\)

The Court repeated this position for the next two decades.

\(^{123}\) U.S. 623 (1887). Prohibition of use resulting in diminution of value is very different from taking property. However, land still economically prized for its development and use capabilities was now held under an expanded "implied obligation" that such development and use not conflict with major social goals. There was an underlying sense in the opinion that the Court accepted the strict property-rightist orientation of the day, but equally realized the inherent conflict that absolute property rights would breed in an increasingly crowded society.

\(^6\) Horwitz and Treanor have noted that colonial America regularly allowed government expropriation of private property without just compensation. Commenting on the origins of the just compensation clause of the Fifth Amendment, both authors argue that uncompensated takings were frequent during this period in our history. Central to such theory, each emphasized the absence of a just compensation requirement from the first state constitutions and the allegedly common practice of taking private lands for public roads. According to this position, the takings clause of the Fifth Amendment was a conservative reaction to colonial legislators' subordination of private interests for the common good. See generally MORTON HORWITZ, THE TRANSFORMATION OF AMERICAN LAW, 1780-1860, 63-64 (Cambridge, Mass., 1977); Note, "The Origins and Original Significance of the Just Compensation Clause of the Fifth Amendment," 94 YALE L.J. 694 (1985), reprinted in 17 LAND USE & ENV. L. REV. 127 (1986) (arguing that the post-independence movement for just compensation was a shift away from republicanism and its emphasis on the primary good.).

\(^7\) 123 U.S. 623 (1887).

Prohibition of use resulting in diminution of value is very different from taking property. However, land still economically prized for its development and use capabilities was now held under an expanded "implied obligation" that such development and use not conflict with major social goals. There was an underlying sense in the opinion that the Court accepted the strict property-rightist orientation of the day, but equally realized the inherent conflict that absolute property rights would breed in an increasingly crowded society.

\(^5\) 123 U.S. at 669.
As late as 1915, the Court continued to separate usage legislation from takings analysis. *Hadacheck v. Sebastian* echoed the basic tenets of *Mugler*, upholding legislation that directly impacted the use and value of private land. In *Hadacheck*, perhaps its last grand embrace of this traditional jurisprudential position, the Court refused to find a takings when a Los Angeles ordinance denied a brickyard owner most of the value of his parcel. Reemphasizing the need for restrictions on the unfettered rights of ownership, the Court characterized the police power as "one of the most essential powers of the government, one that is least limitable." In the Court's view, progress seemed to demand some fundamental concessions on the part of private property owners. The basic notion of regulatory takings was soundly rejected as the Court paid homage to the perceived necessities of social progress and the general economic enhancement that such progress bestowed on private property.

As small towns became urbanized and populations increased, new pressures created escalating tensions between social interests and private rights. The Court's deference to the wide scope of the police power continued unabated through the first part of the twentieth century. While individuals could readily understand the *sic utero tuo* limitation to their vested property rights, the American vision did not encompass overtly expansive governmental interference. The *Muglar* view of free ranging police power remained at odds with the common individual's understanding of private rights. Clashes were inevitable. Judicial reexamination came in 1922 with *Pennsylvania Coal Co. v. Mahon*.

*Pennsylvania Coal* constructed a barrier to unrestrained Mulgarian regulation. In a very direct and relatively brief opinion, Justice Holmes formally gave birth to legal recognition of the concept of

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239 U.S. 394 (1915).

Id. at 405. Hadacheck noted that the use of his land for the manufacture of bricks had a fair market value of $800,000; there remained little if any value in other uses, perhaps a maximum of $60,000 for residential purposes. Hadacheck also emphasized that his existing brickyard was not a nuisance as it emitted little smoke, no noise, and there had been no complaints from neighbors for over seven years. Id.

Id. at 410.

See id. ("There must be progress, and if in its march private interests be in the way they must yield to the goal of the community.").

The distinguishing feature of many nineteenth-century cities was concentration and density. As the century progressed, the more gracious and open pattern of the colonial city disappeared. The spaces between buildings vanished and buildings grew higher. For most of the nineteenth century, cities became both more populous and more dense. Industry was concentrated most often in the central areas of cities. Congestion had more than just aesthetic or psychological consequences. In an age before treatment of water supplies and modern sewage disposal, the congestion of the city exacted a huge cost in life and health. See generally JOHN N. LEVY, CONTEMPORARY URBAN PLANNING, 10-12 (2nd ed. 1991).

260 U.S. 393 (1922).
regulatory takings. In so doing, Justice Holmes placed a real limitation on the government’s ability to regulate private property at the landowner’s economic expense. In Pennsylvania Coal, Pennsylvania’s Kohler Act took away a coal company’s right to mine the support estate where the same would cause subsidence of “any structure used as a human habitation.” The legislature had, in effect, wrapped itself in notions of public good and police power necessity, stressing the dangers that such subsidence posed for the community.

Justice Holmes’ reply was brief. The property right in the coal was illusory without the right to mine the coal. Any regulation that denied this right of appropriation resulted in a taking of private property without compensation even if numerous police power concerns existed. Justice Holmes stressed, “[w]e are in danger of forgetting that a strong public desire to improve the public condition is not enough to warrant achieving the desire by a shorter cut than the constitutional way of paying for the change.” The visitation of unbargained for benefits on the community at large could not negate the private property rights of a landowner who faced substantial economic wipeout of his property interests. While noting that property interests at times must yield to the necessities of the police power, Justice Holmes concluded that “if regulation goes too far it will be recognized as a taking.”

Pennsylvania Coal was thus a marked change from the community idealism of Mugler. Justice Holmes failed to focus on whether the Kohler Act was a reasonable exercise of the state’s regulatory authority. He concentrated first and foremost on the effect that the Act had on private property interests. The Court’s focus was thus shifted from a preference for regulation that met minimum reasoned criteria to a preference for regulation which prioritized free enjoyment

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46 Id. at 412-413.
47 Id. at 413-414.
48 See id. at 414.
49 See id. at 416.
50 Id. at 415.
51 Justice Holmes would later write that he had “always thought that old Harlan’s decision in Mugler v. Kansas was pretty fishy.” Letter from Justice Holmes to Harold Laski (Jan. 21, 1923), in 5 HOMES-LASKI LETTERS (Mark Howe, ed., 1963).
52 See Village of Euclid v. Amber Realty, 272 U.S. 365, 395 (1926) (holding that a court should overturn the action of public officers only if their action “has no foundation in reason and is a mere arbitrary or irrational exercise of power having no substantial relation to the public health, the public morals, the public safety or the public welfare in the proper sense.”); Omaechevarria v. Idaho, 246 U.S. 343, 346 (1918) (rejecting plaintiff’s argument that the statute denied rights guaranteed by the Fourteenth Amendment); Hadacheck v. Sebastian, 239 U.S. 394, 410 (1915) (“[T]he imperative necessity for [the police power’s] existence precludes any limitation upon it when not exerted arbitrarily.”); Chicago & Alton R.R. Co. v. Tranbarger, 238 U.S. 67, 78 (1915) (“[I]t is well settled that the enforcement of uncompensated obedience to a legitimate regulation established under the police power is not a taking of property without compensation, or without due process of law, in the sense of the 14th Amendment.”); Reinman
of private property. Justice Holmes' majority opinion therefore gave renewed recognition to America's traditional \textit{laissez faire} property orientation and reemphasized the linkage between economic stability and private property expectations. If a regulation went "too far" in its economic impact upon the landowner, it could be deemed to be a takings which would then require just compensation.\footnote{v. City of Little Rock, 237 U.S. 171, 177 (1915) (holding that "so long as the regulation in question is not shown to be clearly unreasonable and arbitrary... it cannot be judicially declared that there is a deprivation of property without due process of law, or denial of the equal protection of the laws, within the meaning of the Fourteenth Amendment.").}

\textbf{B. Pennsylvania Coal and the Measuring Stick}

Once courts viewed the government's power to regulate land use as limited, they began to wrestle with the question of how much interference with a landowner's use and control should be permissible.\footnote{Certainly, takings analysis is not coterminous with economic analysis. Regulatory takings have been found to occur in a number of settings where valuation was not at issue. See Loretto v. Teleprompter Manhattan CATV Corp., 458 U.S. 419, 421 (1982) (holding that statute constituted a taking as permitting a permanent physical occupation, even though there was a negligible economic impact under diminution analysis). The focus of this article is primarily on the economic dimensions of the takings issue.} Historically, regulatory takings were measured quantitatively, through judicial inquiry asking, for example, whether the government actions had "gone too far". Given this approach, the initial status of the parcel was of prime importance. Beginning with \textit{Pennsylvania Coal},\footnote{See Penn Central Transp. Co. v. City of New York, 438 U.S. at 131 (rejecting the proposition that diminution of property value, standing alone, can establish a taking, so long as the government is acting in furtherance of a legitimate goal); \textit{Euclid}, 272 U.S. at 365 (upholding an ordinance allegedly reducing the property value from $10,000 to $2,500 per acre). See also Graham v. Estuary Properties, 399 So. 2d 1374 (1981) (holding that the Commission's requirement that the proposed development be reduced by half was a valid exercise of police power); Rose, \textit{supra} note 34, at 562 (noting that \textit{Pennsylvania Coal} "originated what has come to be known as the diminution in value test to determine whether there has been a taking of property."); id. at 566 (explaining that the test has been troubling from the outset because it fails to answer how much diminution in value is too much); Levitt, \textit{supra} note 26, at 212 ("The \textit{Keystone} majority also found that application of the diminution of value test did not support the takings claim." (internal citation omitted)); Riesel \\& Barshov, \textit{supra} note 34, at 896 ("A government regulation which 'goes too far' is not simply a denial of due process of law, the remedy for which is a declaration of invalidity. Rather such a regulation constitutes a taking of property for which just compensation must be paid.") (citing \textit{First English Evangelical Lutheran Church of Glendale v. County of Los Angeles}, 482 U.S. 304, 315 (1987)); \textit{Lucas}, 112 S. Ct. At 2892-93).} the determination of regulatory takings was inexorably tied to the extent of the regulation's economic impact on the parcel at issue.

Justice Holmes' notion of "too far" was quite simple; the police power was not unlimited. Justice Holmes described the point beyond which the interference with traditional notions of private property
could not be ignored quantitatively. The express yardstick of Justice Holmes' calculus was the extent to which the government's interference with a landowner's use and control resulted in a diminution in property value. When costs to the owner reached a certain magnitude, government could no longer hide behind the veil of the police power and deny compensation. As the Justice stressed, "[w]e are in danger of forgetting that a strong public desire to improve the public condition is not enough to warrant achieving the desire by a shorter cut than the constitutional way of paying for the change." In framing his analysis, Justice Holmes impliedly accepted that the coal comprising the support estate constituted the relevant parcel of measurement. Since the Kohler Act potentially prevented access to any of this resource, the taking was absolute. This legislation destroyed one hundred percent of the applicable property interest. In Pennsylvania Coal, the complete diminution in value of the property rendered the question of what is "too far" moot.

It is important to stress how Justice Holmes' delineation of the relevant parcel determined the outcome in Pennsylvania Coal. By allowing the support estate to constitute the denominator or relevant parcel, Justice Holmes defined a total taking. Had he adopted a more expansive view of the initial estate, the measured diminution in value would have been greatly reduced. As Justice Brandeis artfully argued in dissent, a more expansive view of the initial estate would have greatly reduced the measured diminution in value. The true value of the standing coal, he argued, must be measured against the value of the whole property. Great distortion would result if owners were allowed to sever the fee into several pieces and then selectively measure the economic impact against only one of the pieces.

According to Justice Brandeis, this is exactly how Justice Holmes erred in his calculus. By isolating the unit for measurement purposes as the support estate, Justice Holmes created his own mathematics of diminution. Economic loss was 100% of the support estate even though this economic loss only comprised a small percentage of the value of the overall fee. Justice Brandeis counseled that the sum of the rights in the parts could not be greater than the rights of the whole. A landowner's privileges should not be increased by her right to divide the property into diverse interests. As Justice Brandeis illustrated, a landowner's prerogative to sell the air rights above the

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56 See Pennsylvania Coal, 260 U.S. at 416. Although the Court failed to enunciate the boundaries of this limitation, Justice Holmes concluded that the regulation in this case went too far. See id. at 416. By making it commercially impractical to mine, the legislation had the same effect as appropriating the coal. See id. at 414.
57 Id. at 416.
58 See id. at 416-422 (Brandeis, J., dissenting).
59 See id. at 419 (Brandeis, J., dissenting).
60 See id. (Brandeis, J., dissenting).
surface should not modify the takings denominator. If this were the case, landowners could then manipulate the diminution factor by selectively creating smaller and smaller estates. They could manipulate Justice Homes’ criteria in order to compel conclusions of takings in an ever-expanding number of situations.

*Pennsylvania Coal* clearly demonstrates how the initial characterization of the parcel’s parameters directly influences the takings analysis. Definition of the denominator creates the measuring stick for economic impact. As any mathematician will confirm, the choice of the denominator controls the resulting quotient. To the extent that a regulatory taking results from a diminution in value of the property involved, the court transforms its mathematical analysis into a jurisprudence of certainty. The economics of takings analysis thereby is reduced to a simple reflection of the mind’s view of relevant parcel.

### III. THE TWO DIMENSIONS

Ever since *Pennsylvania Coal*, courts have conceptualized the takings issue primarily as a matter of diminution in value. However, over the last seven decades, courts have failed to develop a clear definition of the appropriate unit for measuring the amount of diminution in value. The mathematics of diminution is relatively straightforward once the relative unit of property for comparison is established. That the courts have for so long failed to reach a consensus on this issue illustrates that hidden complexities and strong emotions are an integral part of the regulatory takings arena.

When examining the scope of the relevant parcel, courts have been able to choose between two distinct lines of analysis. Some courts concentrate on the segmented nature of the parcel in question to determine whether such segmentation can define the unit at issue. Other courts focus on the parcel’s relationship to other parcels in the vicinity to determine whether such a relationship should increase the expanse of the relevant unit. These two separate and distinct lines of inquiry reflect American culture’s spatial orientation

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61 See id. (Brandeis, J., dissenting).
63 See, e.g., Loretto v. Teleprompter Manhattan CATV Corp., 458 U.S. 419, 432-35 (1982) (noting that the Court has continually found a taking in cases resulting in a permanent physical occupation of the property, by the government or by others, without regard to whether the action achieves an important public benefit or has only a minimal economic impact on the owner); Hodel v. Irving, 481 U.S. 704, 717 (1986) (finding that a regulation that prohibited both descent and devise of property interests “went too far” and was thus a taking).
64 However, while the mathematics are clear once the elements are defined, the initial matter of defining the elements can be difficult. As a simple illustration: should the court concentrate on the “value remaining” or the “value taken”?
Property exists along vertical and horizontal axes. Our culture encourages its judges, advocates, and lay individuals to relate to property along both axes. Land is vertically perceived as having infinite gradations of depth and height. Land is also as a linear entity for which value is in part determined by its surroundings. It is this affinity to view simultaneously property in a vertical and horizontal dimension that makes the definition of a relevant parcel so complex. The vertical inquiry in takings analysis forces courts to decide whether segmentation of the fee should provide compensable units. The horizontal inquiry compels the courts to undertake a takings analysis which scrutinizes the economic effects external to the parcel itself. Each dimension poses special judicial issues.

A. The Vertical Dimension

In the vertical dimension, the relevant parcel is viewed columnnally from the depths of the earth to the heights of the sky. It comprises the traditional notion of the fee simple with ownership rights extending *ad coelum*. The basic issue in vertical analysis is the degree, if any, to which the court allows segmentation. Since the fee interest can legally be divided into more discrete units that have their own spatial and economic identity, an issue arises as to whether the complete destruction of one of the units should comprise a regulatory taking. In the usual case, government regulation has caused one segment to lose all of its economic value. The diminution is complete within the unit, although typically, significant value continues to reside in the other parts of the fee. Therefore, the primary issue that arises is whether vertical sectioning should define the relevant unit of parcel for takings purposes.

An initial question is whether a fee owner should be permitted to claim a complete diminution of only one “piece” of the underlying fee. The landowner who is prevented by government legislation

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65 See infra notes 268-282 and accompanying text.
66 See supra notes 59-62 and accompanying text.
67 See infra notes 69-77 and accompanying text.
68 *Ad coelum* comes from the Latin phrase, *"cujus est solum, ejus est usque ad coelum et ad inferos."* This roughly translates as, “he who owns the surface of the ground has the exclusive right to everything which is above it and below it.” This widely used concept was derived from Roman law and applied satisfactorily so long as the activities of society remained as they were when the rule was developed. However, once multi-storied buildings and airplanes became common, it soon became clear that the doctrine was too restrictive. In 1946, the Supreme Court confronted this ancient doctrine in *U.S. v. Causby*, 328 U.S. 256, 260-61 (1946). The Court stated that the doctrine had no place in the modern world. Emphasizing that even had Congress declared that the air was more of a commons, the Court noted that if it were not a public highway, every transcontinental flight would subject the operator to countless trespass suits. “[R]ecogniz[ing] such private claims to the airspace would clog these highways, seriously interfere with their control and development in the public interest, and transfer into private ownership that to which only the public has a just claim.” *Id.*
from building too tall a skyscraper, digging too large of pit, or assembling a structure too close to the lot's boundary line has lost some value in the property, at least theoretically. The landowner's intention to develop a pit shadows her legally recognized right to develop, barring any preexisting governmental restriction to the contrary. An ordinance which effectively prohibits excavation takes this right away. There is a corresponding complete loss of that interest's economic value. If the landowner were able to "atomize" her fee, she could argue that the regulation was denying her the total value of her pit. Under diminution analysis, this denial would lead a court to conclude that the regulation constituted a takings because the resulting economic loss was complete.

However, if courts adopt this analysis, landowners could claim a regulatory takings for practically every governmental interference with their property use or value. The landowner can manipulate her fee interest to define a denominator of decreased size but increased significance. The whole fee can be segmented into myriad smaller wholes; the denominator can be divided into a plethora of smaller denominators. Such conceptual severance offers the landowner a unique strategy: the landowner can separate from the whole only those uses that are affected by the regulation and conceptually construe those uses as constituting a separate whole for takings purposes. The landowner can then claim that just those "pieces" are being destroyed by the government action.

If adopted, this policy would have far-reaching consequences. The landowner could self-identify property units for takings purposes, fractioning the fee whenever regulation threatened to impair a use. An owner of a lucrative McDonald's franchise could argue that the town's newly enacted building height restrictions took the entirety of her remaining air rights (whether or not she ever intended to develop them), therefore necessitating just compensation under the takings clause. The owner of a rich, productive oil field

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70 See Margaret Jane Radin, The Liberal Conception of Property: Cross Currents in the Jurisprudence of Takings, 88 COLUM. L. REV. 1667, 1676 (1988). Radin states that conceptual severance is a procedure that:

consists of delineating a property interest consisting of just what the government action has removed from the owner, and then asserting that particular whole thing has been permanently taken. Thus, this strategy hypothetically or conceptually 'severs' from the whole bundle of rights just those strands that are interfered with by the regulation, and then hypothetically or conceptually construes those strands in the aggregate as a separate whole thing.

Id.
71 See Indiana Toll Road Comm'n v. Jankovich, 244 Ind. 574, 581, 193 N.E.2d 237, 240 (1963), cert. granted, 377 U.S. 942 (1964), and cert. dismissed, 379 U.S. 487 (1965) (holding "that the reasonable and ordinary use of air space above land is a property right which cannot be
could segment its surface rights and demand compensation when the beach front property was denied a residential building permit because of the jurisdiction’s environmental concerns. Fractionization of property interests would become the goal of every reasonable landowner, encouraging fee simple owners to manipulate their fee interest so as to maximize their economic gain. For example, fee simple owners could create defeasible estates—"so long as it is used for shopping center purposes"—if certain restrictive ordinances were predicted. A moderately valuable fee could be splintered into a column of individual segments. Compensation of each ensuing segment could become a legal requirement.

Even if the above problem were dealt with by requiring owners to include all segments of their fee in the denominator calculation, individuals could still easily manipulate the variables to enhance the possibility of gaining compensation for regulatory actions. If the fee owner transfers the segmented interest to a third party, then the value of that party’s complete property holding could be eliminated by the legislation. A third party who purchases a bed of underground quartz may be bankrupted by legislation that prevents underground mining, even though the surface owner continues to prosper in her use of the parcel. When the economic diminution is visited on one individual without the reality of having counterbalancing uses on remaining segments, a new jurisprudential situation arises. All ownership value disappears, rather than merely the total value of one of many segments. Landowners would therefore be counseled to sell the segments in order to maximize their value. For those foolish enough to retain their own air rights, the city’s new height restrictions would demand no compensation. However, for those with the foresight to sell their air rights and buy those over someone else’s fee, the height restriction would effect a total tak-

71 Humbach, supra note 3 at 807. ("Carried to the logical end, ordinary residential zoning could, for example, be effectively ‘busted’ the simple expedient of creating fee simple determinable estates limited to endure only “so long as the land is used for shopping center purposes." (citation omitted).

72 See Consolidated Rock Products Co. v. City of Los Angeles, 57 Cal.2d 515 (1962) (upholding a city ordinance prohibiting the rock and gravel operations on the plaintiff’s property).
The threat of manipulation continues to dominate this jurisprudential position. Elaborate schemes with little if any societal benefit would saturate the land market. Rational market players would demand segmentation for its own sake in reaction to takings jurisprudence rather than normal market incentives.

1. Court Decisions Along the Vertical Axis

_Pennsylvania Coal_ had fashioned the major lines of debate regarding property's vertical segmentation for regulatory takings purposes. Courts have been investigating the parameters of takings' vertical axis ever since _Pennsylvania Coal_ began the debate. The majority position, fashioned by Justice Holmes, presumed the ability to calculate diminution in value by focusing on only one of many vertical segments. The support estate owned by Pennsylvania Coal Company was viewed as a whole. If the ability to mine was restricted, a total diminution of the support estate would follow. The coal company owned only this "piece." Consequently, the regulation deprived the owner of all value of its segment. For Justice Holmes, this was sufficient to find a regulatory takings in the case. Brandeis, however, counseled that value calculation had to be based on the entire vertical dimension. Even though individuals could legally separate the fee into an infinite number of parts, value calculation could not be likewise segmented. Diminution had to be judged within the context of the entire fee, otherwise the calculus would be distorted and the hostage of rampant manipulation.

Courts, however, did little to expand this analysis over the next fifty years. Most regulatory takings cases during this period assumed the totality of the parcel and arguments regarding economic destruction of only one of several segments found little audience. The

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75 Rubenfeld, _supra_ note 36, at 1107 (explaining that if 'A' deeds to 'B' the right to exclude cable television equipment from her property, and State 'X' passes a mandatory installation law, 'B' might be entitled to compensation under _Lucas_ even though 'A' might not be entitled to compensation under _Loretto_).

76 See _Pennsylvania Coal_, 260 U.S. 393, 413-14 (1922).

77 See id. at 419 (Brandeis, J. dissenting).

78 Compare _Pennsylvania Coal_, 260 U.S. 393 (1922) (holding that there was a taking when the company could not mine because the whole of what the company owned was the mining rights) with _Goldblatt_ v. _Town of Hempstead_, 369 U.S. 590 (1962) (holding that there was no taking by statute that destroyed plaintiff's right to use the land as a quarry even though plaintiff owned both the piece of land and the right to use the land as a quarry because the right to mine was merely part of the entire property right). _Goldblatt_ is one of the rare exceptions to the Court's general refusal to enter the takings arena after _Pennsylvania Coal_.

State courts generally followed the reasoning of _Penn Central_, allowing restrictions that destroyed only a part of a property right. See also _Hinman_ v. _Pacific Air Trans._, 84 F.2d 755 (1936), _cert. denied_, 500 U.S. 654 (1937) (holding that there was no right to injunctive relief to stop planes from passing through the air space over plaintiff's property because there was no demonstration of economic loss or harm in the whole of the property.); _Multnomah County_ v. _Howell_, 496 P.2d 235 (Or. Ct. App. 1972) (holding that a zoning ordinance that applies to only a
widespread landmark and environmental legislation of the late sixties and early seventies, however, forced the Court to renew its discussion of the vertical plane. The new aesthetic and conservationist legislation characteristically burdened only a part of the entire fee interest. Although the parcel maintained several uses, the regulated segment often lost its economic feasibility. This onslaught of legislation placed increased pressure on landowners and set the stage for a revisiting of takings doctrine.

It would be the architectural designs of famed architect Frans Boehm which provided the basis for the portion of a landowner’s land does not amount to a taking); Sibson v. New Hampshire, 336 A.2d 239 (1975) (holding that marshland protection law preventing the filling of plaintiff’s land was a proper exercise of police power and was not a taking merely because a part of plaintiff’s land could not be used in a particular way).


Around 1970, there was a remarkable resurgence of regulatory reform activity which reshaped the federal regulatory system. Although the major preoccupations of the period are clear—an upsurge of interest in health, safety, and conservation issues—it is anything but self-evident why these concerns emerged precisely when they did. Robert Rabins infers that the Vietnam War and the book, *Silent Spring*, by Rachel Carson, could have had some influence. He terms this period the “Public Interest Era.” See Robert L. Rabins, *Federal Regulation in Historical Perspective*, 38 STAN L. REV. 1189, 1278-95 (West 1996 & Supp. 1997) (1986).

Penn Central, 438 U.S. at 116-117. The Court stated that:

Two separate plans, both designed by architect Marcel Breuer and both apparently satisfying the terms of the applicable zoning ordinance, were submitted to the Commission for approval. The first, Breuer I, provided for the construction of a 55-story office building, to be cantilevered above the existing facade and to rest on the roof of the Terminal. The second, Breuer II Revised, called for tearing down a portion of the Terminal that included the 42nd Street facade, stripping off some of the remaining features of the Terminal's facade, and constructing a 53-story office building. (footnote omitted)

See generally David Lasker, *Around Home Wassily Chair*, L.A. TIMES, May 21, 1989, at 44C (revealing that in 1925 Marcel Breuer, at the age 24, was the head of the furniture workshop at the Bauhaus design school in Dessau, Germany, and that Breuer invented the Wassily chair); David Lasker, *Around Home Notes on Southwest Dishes, Wood Turning and Cesca Chairs Breuer’s Cesca Chair*, L.A. TIMES, June 10, 1988, at 44F (reporting that Hungarian-born Marcel Breuer (1902-1981) is the brainchild of the Cesca chair which ranks among the century’s most familiar designs)
Supreme Court's reevaluation of its takings doctrine in *Penn Central Transportation. Co. v. City of New York.*

In the congestion of many urban habitats, space is maximized by building upward. Constrained by the limits of downtown geography, development proceeds vertically and value becomes concentrated in the architecture of skyscrapers. Given the urban topography of New York City, it therefore was not unusual for air rights to comprise the major part of a lot's value. When Penn Central Transportation Company attempted to profit by building a 50-story office building in its vacant space above New York City's Grand Central Station, it was merely attempting to exploit its most valuable vertical segment. Denial of its development plan by the Landmarks Preservation Commission led to the owner's suit charging, *inter alia,* that the application of the city's preservation law constituted a taking of its property.

Writing for the majority, Justice Brennan stated that owners could not establish a "taking" merely by showing that they had been denied the right to exploit the airspace above their property. In deciding whether a particular regulation effects a taking, courts must focus on "the nature and extent of the interference with rights in the parcel as a whole." While the Court accepted the company's argument that the Landmarks Law had deprived the company of gainful use of air rights above the terminal, the Court expressly rejected the notion that it should find a takings irrespective of the value of the remainder of the company's parcel. Regulatory takings are not established merely by showing that an owner is denied the ability to exploit one of several property interests available for development. Brennan ended the vertical debate with one simple declaration: "Taking" jurisprudence does not divide a single parcel into discrete segments

Manuela Hoelterhoff, *Death by Design: How to Murder a Monument,* WALL ST. J., Mar. 18, 1986 (noting that Marcel Breuer was Penn Central's architect and he was amazed that anyone should object to anything he designed or might wish to do).

*Penn Central,* 438 U.S. at 116 n.16.

As cities become more urbanized, space becomes more and more scarce resulting in an architecture which builds upward rather than outward. Consequently, air rights become more valuable in the city where there is less land on which to build.

*Penn Central,* 438 U.S. at 116 ("On January 22, 1968... Penn Central... entered into a renewable 50-year lease and sublease agreement with... UGP Properties, Inc.... Under the terms of the agreement, UGP was to construct a multistory office building above the Terminal. UGP promised to pay Penn Central $1 million annually during construction and at least $3 million annually thereafter.").

*Id.* at 142 (Rehnquist, J., dissenting) ("Before the city of New York declared Grand Central Terminal to be a landmark, Penn Central could have used its 'air rights' over the Terminal to build a multistory office building, at an apparent value of several million dollars per year.").

*See id.* at 118-19.

*Id.* at 190.

*Id.* at 190-31.
and attempt to determine whether rights in a particular segment have been entirely abrogated.\textsuperscript{89}

The majority explicitly stressed that there is little precedent for vertical piecemealing. Previously, the Court had upheld a number of laws that had completely restricted the development of one segment of an owner's fee.\textsuperscript{90} The Court noted that such case precedent should dispose of any contention that segmentation of takings claims could be based on \textit{Pennsylvania Coal}.\textsuperscript{99} For the majority, the diminution of value had to be measured against the value of the entire parcel, here, the fee comprising the city tax block.\textsuperscript{92} The superadjacent airspace could not be viewed in isolation; the remainder of the company's property interests must be included in the denominator.

A decade later, the Court clearly and emphatically reiterated its position regarding the vertical denominator. Faced with the fact that twenty-seven million tons of coal were required to be left in thirteen mines as a result of the 1986 \textit{Pennsylvania Mine Subsidence Act}, an association of coal companies filed suit arguing that the state had effectively appropriated the coal since there was no other useful purpose to the coal if it were not mined.\textsuperscript{94} The association emphasized that the Act completely destroyed the value of their support estate, a legally recognized, separate and distinct property interest under

\textsuperscript{89} \textit{Id.} at 130.

\textsuperscript{90} \textit{See Welch v. Swasey}, 214 U.S. 91, 107 (1909) (holding that placing zoning restrictions on building height which discriminated based on the residential or commercial classification of the city section in which Welch wanted to build was "reasonable and justified by the police power"); \textit{Goldblatt v. Town of Hempstead}, 369 U.S. 590, 594-96 (1962) (holding that ordinance which prohibited excavation below the water table which had the effect of confiscating Goldblatt's sand and gravel mining business was not an unconstitutional taking, while acknowledging that some government regulation can be "so onerous as to constitute a taking which constitutionally requires compensation"); \textit{Gorieb v. Fox}, 274 U.S. 603, 604, 608-610 (1927) (holding that a setback ordinance which created a building line which must be "as far from the street as that occupied by 60% of the existing houses in the block," was constitutional because city councils are "better qualified than the courts to determine the necessity, character and degree of regulation").

\textsuperscript{91} \textit{See Penn Central}, 438 U.S. at 130 n.27 (explaining cases which disposed of the \textit{Pennsylvania Coal} view that "full use of air rights is so bound up with the investment-backed expectations of appellants that governmental deprivation of these rights . . . irrespective of the . . . value of the parcel as a whole—constitutes a 'taking'").

\textsuperscript{92} \textit{Id.} at 130-131.

\textsuperscript{93} \textit{Pennsylvania Bituminous Subsidence and Land Conservation Act}, 52 PA. CONS. STAT. ANN. §1406.1 (West 19xx) (the Act was established to (1) conserve land area (2) protect the public (3) enhance the value of surface lands (4) aid in providing surface water drainage and public water supplies (5) improve the use and enjoyment of surface lands and (6) maintain primary jurisdiction over surface coal mining in Pennsylvania.); \textit{Id.} at §§ 1406.2, 2 (§1406.5 of the Act requires all bituminous coal mines subject to the Act to apply for a permit before they open, reopen or continue operating their mine); \textit{see also Burns v. Consol. Pennsylvania Coal Co.}, 636 A.2d 642, 647 (Pa. Super. 1994).

Pennsylvania law. The Supreme Court’s response was direct: “27 million tons of coal do not constitute a separate segment of property for takings law purposes.” The Court stressed that takings jurisprudence demanded economic evaluation be assessed against the entire parcel at issue, rather than against one piece of the whole. The majority pointed out that many zoning ordinances placed limits on an owner’s right to make profitable use of one or more segments of the property; however, if profitable use can be made of the parcel as a whole, then there exists no basis for claiming a Fifth Amendment violation.

In its *Keystone* decision, the Court repeatedly underscored its resolve that segmented interests should not furnish the denominator of the takings fraction. Neither the uniqueness of Pennsylvania property law in regarding the support estate as a separate property interest nor the enormity of the coal companies’ projected loss gave the Court cause to digress from its established principle. Indeed, the Court seemed to reject squarely Justice Holmes’ conclusions in *Pennsylvania Coal* and adopt Brandeis’ position regarding parcel identity. There was no takings of economic viability since the right to mine the support estate constituted only a fraction of the total value of the companies’ mining rights. As the majority pointed out, Supreme Court jurisprudence since 1922 had strictly maintained the principle of nonsegmentation.

Significantly, the majority decision was forwarded in the face of a vigorous dissent. Rehnquist, writing for the dissenters, criticized the majority’s broad definition of the relevant mass of property, a definition which allowed it “to ascribe to the Subsidence Act a less pernicious effect on the interests of the property owner,” and its refusal

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95 See id. at 500 (“Pennsylvania property law is apparently unique in regarding the support estate as a separate interest in land that can be conveyed apart from either the mineral estate or the surface estate . . . .” ) Despite Pennsylvania’s legal recognition of the support estate as a separate property interest, it could not be used profitably by one who does not also possess either the mineral estate or the surface estate.

96 Id at 498.

97 Id.

98 Id. at 508.

99 See id. at 496 (relating petitioners description of the effect that the Subsidence Act had from 1966-1982 on 13 of the mines that the petitioners operate, and claims that they have been required to leave approximately 27 million tons of coal in place).

100 But see John E. Fee, Comment, *Unearthing the Denominator in Regulatory Taking Claims*, 61 U. CHI. L. REV. 1535, 1541 & nn.33-34 (1994) (arguing that the Court did not expressly overrule *Pennsylvania Coal*, rather it distinguished that case on two grounds: “First, the legislation in *Pennsylvania Coal* was a private benefit statute, whereas the regulations in *Keystone* were issued for the public benefit . . . . Second, the DER regulations did not make the mining of ‘certain coal’ commercially impracticable as the earlier law had done”).

to evaluate the Act’s impact against the support estate alone. With the two positions so clearly delineated, the majority’s ruling gained increased prominence. Conceptual severance and vertically fractionated interests were removed from takings analysis. There could be no doubt that by firmly cementing the principle of nonsegmentation in Keystone, the Supreme Court acknowledged nonsegmentation as the law of the land.

2. Status and Policy Implications of the Vertical Dimension

The issue of the vertical dimension has been resolved. The view recognizing division of the aggregate into discrete segments of individualized value has been replaced by the demand to view the parcel “as a whole.” Whatever other definition one gives to a parcel’s “complete package,” it is clear that, for takings purposes, diminution calculus cannot focus solely on separate strips of the vertical bundle. Subsurface, surface, and air rights together comprise the economic whole against which the effects of regulation must be measured. This rule is readily understood, finds simple application, and leads to efficient management of land. Any other approach would invite inventive severance of unified parcels as well as widespread manipulation of property interests. Economic, judicial, and administrative costs would rise and market efficiency would likely fall. Most importantly, however, the nonsegmentation rule diminishes the threat of rampant takings challenges for much of today’s needed preservationist and environmental legislation. Theories of negative servitudes and special estates disappear in the vertical landscape. The government is freed to base its decision making on aggregate costs and benefits, just as individual landowners traditionally do with their parcels.

B. The Horizontal Dimension

In the horizontal dimension, the relevant parcel is viewed linearly. Rather than the height and depth orientation of the vertical dimension, parcels are evaluated in terms of length and width. Central to the focus of horizontal analysis are the spatial borders of

102 See id. at 517-520 (Rehnquist, J., dissenting) (stating in opposition to the majority opinion that:

The regulation . . . does not merely inhibit one strand in the bundle . . . but instead destroys completely any interest in a segment of property. I would hold that the Act works a taking. I see no reason for refusing to evaluate the impact of the Subsidence Act on the support estate alone, for Pennsylvania has clearly defined it as a separate estate in property . . . [W]here the estate defined by state law is both severable and of value in its own right, it is appropriate to consider the effect of regulation on that particular property interest.

Id. at 518-20.

103 See supra notes 72-77.
the property at issue, including, at times, the boundaries of other land interests in the area. Land is envisioned as an expanse of lineal square feet. The main issue is to determine which specific square footage area should be examined for takings purposes.

Ascertaining the horizontal dimension presents one of the most vexing problems in takings jurisprudence. Parcel valuation is not neatly contained within the meridian lines of a jurisdiction's tax maps. Lots vary in size and topography. Larger parcels can be, and frequently are, subdivided into smaller parcels. Any given parcel may have particular areas that offer special opportunities for exploitation or areas that are uniquely sensitized to various forms of development. In addition, a lot can gain most of its economic value not from its inherent characteristics, but from the nature and worth of the surrounding lands. Neighborhoods and contiguous parcels often underlie the real value of a given tract.

The determination of the "identifiable and separable property interest" worthy of Fifth Amendment protection has therefore led a chartered history along the horizontal plane. While simplicity might counsel a definition designated by the lot lines of the parcel being regulated, notions of fairness and justice have caused such metes and bounds parceling to be suspect. Any responsible determination of a regulation's economic impact requires the evaluator to ascertain the nature and extent of the parcel affected. Value can be derived from beyond the physical boundaries of the property interest; and value can be unequally distributed within an existing lot. Calculation of the takings denominator consequently demands a firm understanding of the horizontal variable.

The horizontal dimension can be viewed and evaluated in a number of different manners. A plethora of variables exist along the horizontal axis that can have an impact on the valuation of a parcel. Parcels can vary in size from a few square feet to several square miles. Lush timber can inhabit one corner of a tract and swampy wetlands another. An owner can employ the property in an integrated use with a contiguous lot or chronologically subdivide the parcel into a number of smaller units over a long period of time. Liquor stores can open down the street and devalue the plot. Sharing a boundary with a state or national park can insure a heightened value for generations. It is this web of variables and the interrelationships that exist among them that pose the greatest challenge to decision makers. The sorting of significant factors and the ranking in a monetary hi-

104 See Keystone, 480 U.S. at 517 (Rehnquist, C.J., dissenting).
105 See supra notes 128-138 and accompanying text.
106 See generally Schleich, supra note 3; Humbach, supra note 3; Fee, supra note 101.
erarchy is not a simple task. A variety of yardsticks have been employed by a variety of courts. Finding the horizontal parameters of the takings equation has proved to be one of the more elusive quests that courts have engaged in during the past century.

Significantly, both the spatial and temporal axes of the horizontal dimension provide variables for consideration. Each axis influences the other and opens jurisprudential issues that escape scrutiny when one axis is viewed in isolation. An individual's economic investment in and reasonable investment-backed expectations for a parcel may be inadequately represented by concentrating on present market value. The individual's complete ownership history — including what, how, and when the owner subdivided, used, hypothecated, or improved the parcel — provides information that is central to understanding the owner's particular relationship to the land. To the extent that takings jurisprudence is concerned with notions of justice and fairness this individualized history becomes pivotal. Instead of merely looking at the current economic impact that the regulation has on the metes and bounds description of the fee contained in the owner's grant deed, additional factors are often considered. Courts have typically considered parcel contiguity and unity of use and ownership as consequential. Various courts have likewise found it "unfair" to designate a denominator without considering, inter alia, the degree to which the particular property is an identifiable property interest, the economic viability of the particular property interest

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107 A rudimentary example can highlight the complexities. An individual owns three ten acre parcels in one municipality. One ten acre parcel, now currently worth $50,000, was purchased ten years ago for $10,000. It is contiguous to the old town square and is yet to be developed. The second and third ten acre parcels are across town and were purchased two years ago for $10,000 each. The second parcel was subdivided by the individual into two five acre lots; the western five acre lot was recently sold for $20,000. The individual has developed his remaining five acre interest into an office park. His plans to enlarge this development by building on his contiguous ten acre tract have been defeated by wetland designation of five acres of this remaining parcel. When the individual challenges this legislation as a regulatory takings, how should the court view the relevant parcel for diminution analysis? Should it consider the relevant unit as only the five acre portion designated as wetland? Should valuation analysis look at use and value of the entire ten acre expanse of the third lot? Should the economic calculus extend to the contiguous five acre parcel that has been developed or consider the earlier contiguity of the entire ten acres of the second parcel? Should it add into the mathematics the $20,000 profit from the subdivided portion of the second plot? Should the valuation of the first parcel or its appreciation over the last ten years form part of the takings denominator? Such questions have plagued the takings debate.

108 See Schleich, supra note 3, at 388 (noting that it is the economic value of the property "owner's anticipated or current use of the property with the property's economic value as affected by the regulation").

109 See Concrete Pipe and Prods. of Cal., Inc. v. Construction Laborers Pension Trust for S. Cal., 508 U.S. 602, 643-44 (1993) (rejecting attempt to divide the property into what was taken and what was left).
under state law, the terms of the original purchase, the history of the treatment of the parcel, the unity of use within and outside the parcel, or the physical characteristics or natural boundaries of the lot. Concern for a just result has consequently splintered the notion of a takings denominator into a myriad of constructions. To date, courts have failed to agree on how to weigh these variables or even which should be considered.

1. Court Decisions Along the Horizontal Axis

For the first several decades of takings analysis following Pennsylvania Coal, there was little judicial focus on the horizontal dimension. The Brandeis-Holmes debate had revolved around the vertical plane and the ability to sever the subsurface coal rights from the fee. While Brandeis' writings could be expansively interpreted to apply to the horizontal dimension, the limited factual setting of the case channeled most of the ensuing debate into issues of vertical segmentation. Although diminution in value had become a central element in takings analysis, diminution was most often characterized in terms of lost subsoil or air rights rather than in terms of re-

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111 See Florida v. Schindler, 604 So. 2d 565, 567-68 (Fla. Dist. Ct. App. 1992), review denied, 613 So. 2d 8 (1992) (holding that the relevant unit was the entire 3.5 acre parcel where 1.85 acres was precluded from development since the owner purchased the entire parcel with full knowledge that only a portion would be buildable, based in part on the historic treatment of the parcel as a single unit); Thompson v. Village of Hinsdale, 617 N.E.2d 1227, 1245 (1993) (explaining that the entire parcel was purchased as a single unit at one time, the court treated the entire parcel as the relevant unit for measuring taking).
112 See Kaiser Dev. Co. v. Honolulu, 649 F.Supp. 926, 947 (D. Hawaii 1986), cert. denied, 499 U.S. 947 (1991) (considering how the land was/is treated by the owner is one of the factors to be considered by the court in determining the relevant parcel); Ciampiti v. United States, 22 Cl. Ct. 310, 318 (placing emphasis on the fact that owner purchased and financed the 45 acres as a single parcel, as the owner, at the time of purchase saw the parcels as inextricably linked).
113 Ciampiti, 22 Cl. Ct. at 318 (identifying among the factors for determining the relevant parcel, the "degree of continuity, date of acquisition, extent to which the parcel has been treated as a single unit, [and] the extent to which the protected lands enhance the value of remaining lands").
114 See id.
115 See infra at note 124.
116 See supra at notes 76-78 and accompanying text.
117 See Pennsylvania Coal, 260 U.S. 393, 419 (Brandeis, J. dissenting) ("The rights of an owner as against the public are not increased by dividing the interests in his property into surface and subsoil. The sum of the rights in the parts can not be greater than the rights in the whole."); see also Fee, supra note 100, at 1552. Fee notes that: Although the issue in Pennsylvania Coal involved a vertical division of land, the problem identified by Justice Brandeis is no different in the horizontal context. If an owner cannot limit the power of the state by selling his air or underground rights, why should he be able to do so by selling horizontally adjacent property rights?
118 Pennsylvania Coal provided little insight into how and when a regulation would go "too far" under the Fifth Amendment. See Humbach, supra note 3, at 777-78 & nn. 31, 34.
strictions along the surface fee itself. When Penn Central reawakened the Court to the takings question, it too investigated the geography of vertical economics.\footnote{See Penn Central Transp. Co. v. City of New York, 438 U.S. 130-131 (1978); see also Schleich, supra note 3.}

Early cases had muffled the impact of horizontal analysis. Beginning with Euclid v. Ambler Realty Co.,\footnote{272 U.S. 365 (1926).} the Supreme Court consistently reinforced the view that zoning regulation was not in itself a takings. An owner's individual goals for the parcel could be severely curtailed by land use restrictions. Comprehensive zoning laws that prescribed,\textit{inter alia}, the extent of a lot's area that must be left open for light and air or in aid of fire protection gained constitutional legitimacy.\footnote{Id.} Likewise, usage constraints that had an overwhelming impact on the economic viability of the tract were unfailingly held to be valid.\footnote{See, e.g., id.; Hadacheck v. Sebastian, 239 U.S. 394 (1915); Mugler v. Kansas, 123 U.S. 623 (1887).} Diminutions in value as high as ninety percent\footnote{See Hadacheck, 239 U.S. at 414 (allowing as constitutional a regulation which resulted in diminution of property value from $800,000 to $60,000).} were sanctioned by police power notions of progress and social necessity and by the elastic judicial concept of reciprocity of advantage.\footnote{See generally Raymond R. Coletta, Reciprocity of Advantage and Regulatory Takings: Toward a New Theory of Takings Jurisprudence, 40 Am. U. L. Rev. 297 (1990); Glass, supra note 3; Levitt, supra note 26; Laura McKnight, Regulatory Takings: Sorting Out Supreme Court Standards After Lucas v. South Carolina Coastal Council, 41 U. Kan. L. Rev. 615 (1993); Laitos, supra note 3; Buck, supra note 3; Thomas A. Hippler, Comment, Reexamining 100 Years of Supreme Court Regulatory Takings Doctrine: The Principles of "Noxious Use," "Average Reciprocity of Advantage," and "Bundle of Rights" from Mugler to Keystone Bituminous Coal, 14 B.C. ENVTL. AFF. L. Rev. 653 (1987).} Even when a regulation denied a higher or best use, Justice Holmes' "too far" line would not be crossed if sufficient value remained. Courts measured the value of an owner's holding within the parameter of the entire surface square footage. Denial of a particular usage on one part of the whole became universally accepted.

Total denial of use or economic benefit on one part of a lot's surface whole likewise received early judicial acceptance. Most ordinances limited the range of uses that an owner could develop on a parcel, without completely closing the owner's development window. However, setback ordinances entirely abolished an owner's ability to build over certain portions of the owner's land. An owner's right to develop these particular strips of property was totally eliminated. These "no building zones" frustrated many investment-backed expectations and diminution arguments seemed ripe. But as early as 1927, the Supreme Court upheld the legitimacy of building setback
requirements in *Gorieb v. Fox,*\(^{125}\) All courts have unfailingly continued
to do so ever since.

It was not until the 1970’s that the boundaries of the horizontal
dimension began to be actively and consistently explored. The
shrinking viability of the vertical segmentation argument and the in-
crease in wetland and other governmental regulation likely drove the
calculus of takings into investigation of the horizontal domain.
However, whatever the cause of the increased focus, courts through-
out the country were beginning to be besieged with takings chal-
lenges based on a regulation’s limitation of only one portion of an
owner’s total surface area holding.

Two cases involving wetlands regulation that deprived the land-
owner of all practical use of a portion of the owner’s larger tract
demonstrated such challenges. In both cases, environmental restric-
tions forced a portion of each parcel to remain vacant and economi-
cally unproductive. In *American Dredging Co. v. State of New Jersey and
Dept. of Envtl. Protection*\(^{126}\) wetland restrictions on a 2500 acre tract
prevented all practical use of eighty acres of the total area. The
landowner claimed that such restrictions were a complete diminu-
tion in value of the subject eighty acres and declared that its land
had been taken by the regulations.\(^{127}\) Similarly, the landowner in
*Jentgen v. United States*\(^{128}\) found that federal regulations prevented him
from developing more than forty acres of the 101 acre tract he had
purchased. The implication for Jentgen was that he could no longer
pursue his dream to build a water-oriented residential community on
his tract. Jentgen brought suit alleging that he had suffered an un-
compensated taking.

For both owners, government ordinances imprisoned their do-
mino{\textsuperscript}nion and devalued their property interest. They each had lost any
real possibility of developing the regulated segments that comprised
substantial pieces of their overall holdings. If they could convince
the courts to define the relevant parcel as the eighty or forty acre
portions refused dredge and fill permits, then the courts would be
forced to find a Fifth Amendment takings under diminution anal-
ysis. If minimum lot size were used as a reference point, it was, in
each case, equivalent to the government preventing any building
upon, and therefore taking all value from, more than a hundred sin-
gle-family residential lots. When scrutinized as a conglomeration
of singular small units, the numerator and denominator of the takings
equation mirrored each other.

\(^{125}\) 274 U.S. 603 (1927).
\(^{127}\) See id. at 43.
American Dredging and Jentgen each demonstrated the potential lurking within the definitional parameters of the horizontal dimension. Segmentation along the horizontal plane could force a takings result under diminution analysis. Each of these courts was directly faced with the issue of how to measure the relevant parcel for takings purposes, and each was directly challenged by the landowners involved to rule within the demands of "justice and fairness." Significantly, both the New Jersey Supreme Court and the United States Court of Claims denied the landowners any relief. Underlying each decision was a consistent definition of the relevant parcel. The holding in Penn Central that parcels must be viewed as a whole was fully applicable. The controlling fact for the New Jersey Supreme Court was that American Dredging had originally purchased a 2500-acre tract. This purchase was a single unit of ownership and was, for the court, the relevant piece to serve as the takings denominator. When the tract was viewed in its entirety, the restricted eighty acre section comprised only three percent of the area. Little use or value decline was evident. Correspondingly, the United States Court of Claims refused Jentgen's invitation to view the relevant parcel as anything other than the 101 acre tract originally purchased. Since Jentgen could still develop forty of this total 101 acres, no unconstitutional regulation had been applied. Use of his property was still economically viable when scrutinized as a 101 acre whole. For the court, the case "merely presents an instance of some diminution in value, or frustration of reasonable investment-backed expectations, stemming from changes in applicable statutes and regulations...."

American Dredging and Jentgen demonstrate then the emerging reluctance of courts to sever horizontally property interests. When land was purchased at one time, the totality of that purchase defined the relevant parcel. Diminution in value was judged against the entire original acquisition, rather than only the specific area subjected to the regulation or the area remaining in ownership at the time of the regulation. Courts continued to emphasize the Supreme Court's admonition in Penn Central that "taking jurisprudence does not divide a single parcel into discrete segments and attempt to determine whether rights in a particular segment have been entirely abrogated... this Court focuses rather... on the nature and extent of the interference with rights in the parcel as a whole." Although the

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129 See Penn Central, 438 U.S. at 130-31 ("'Taking' jurisprudence does not divide a single parcel into discrete segments and attempt to determine whether rights in a particular segment have been entirely abrogated... this Court focuses... on the nature and extent of the interference with rights in the parcel as a whole...".

130 See American Dredging, 404 A.2d at 43.

131 See Jentgen, 657 F.2d at 1214.

132 Penn Central 438 U.S. at 130-131.
facts of *Penn Central* made this language clearly applicable only to vertical segmentation,\(^{135}\) the phrase “parcel as a whole” was consistently construed to encompass the entire physical breadth of the tract originally purchased.

In case after case,\(^{134}\) courts throughout the country refused to limit the takings denominator to just the regulated portion of land or to the reduced size of the tract at the time of the restriction’s application. The proper point of reference for diminution analysis was assumed to be the entire ownership interest as it existed at the time of purchase. Many courts invoked this rationale, finding additional support in the Supreme Court’s dicta in *Andrus v. Allard*.\(^{135}\) Once again, the Court had admonished the lower courts that “the destruction of one strand of the bundle is not a taking because the aggregate must be viewed in its entirety.”\(^{150}\) “Aggregate” and “parcel as a whole” became the terms of choice used by the courts to expansively define the takings denominator.

The United States Court of Claims again looked to the original purchase as the defining parcel unit in *Deltona Corp. v. United States*,\(^{137}\) framing its analysis around the developer’s initial 10,000 acre acquisition in 1965 rather than the much smaller area remaining to be developed at the time of the regulation’s imposition in 1973.\(^{135}\) In 1984, the United States Court of Appeals for the Ninth Circuit in *MacLeod v. Santa Clara County*,\(^{139}\) ruled that the denial of the right to use a sizable portion of a single 7000 acre parcel for timber harvest-

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\(^{133}\) See supra notes 82-89 and accompanying text.


\(^{150}\) Id. at 65-66 (questioning whether the Migratory Bird Treaty Act effected a taking upon the plaintiffs by denying them the right to sell feathers. The Court found the denial of the right to sell the feathers was not a taking since the owners retained the rights to possess and transport their property and to donate or devise the protected feathers).

\(^{136}\) 657 F.2d 1184 (1981).

\(^{137}\) See id. at 1188-89. In 1964 Deltona purchased an undeveloped 10,000 acre parcel, for $7,500,000, on the Florida Gulf coast with the intention of developing Marco Island, a water-oriented residential community. This required considerable dredging and filling, as well as the permanent destruction of much of the natural vegetation. Because Deltona’s proposed dredge and fill activities were to take place in navigable water of the U.S., it was required to obtain the proper permit from the Army Corps before any of the work could legally get underway. Deltona’s problems culminated in a lawsuit stemming from its inability to obtain all the permits which it needed to complete its project. *Id.*

\(^{138}\) 749 F.2d 541 (9th Cir. 1984).
ing purposes — the only viable use on that portion of the land — did not effect a taking since diminution in value must be scaled against the entire original tract. The court directly rejected the owner’s contention that denial of the use of this smaller portion of the whole was so bound up with the investment-backed expectations that such government deprivation of the use would constitute a taking. As the court stated, “it is well settled that taking jurisprudence does not divide a single parcel into discrete segments or attempt to determine whether rights in a particular segment of a larger parcel have been entirely abrogated.”

Correspondingly, when the Town of Moraga enacted an open-space ordinance that restricted development of the ridgeline areas of a developer’s property, the District Court for the Northern District of California emphasized the fact “that ‘taking’ analysis does not permit a landowner to parse up his property in order to make a claim.” In 1990, the Supreme Court of Washington directly rebuked a landowner’s assertion that wetland designation of one-third of its 4.5 acre parcel constituted a taking of this portion, which under the regulation had to remain undeveloped. The justices noted that “neither state nor federal law has divided property into smaller segments of an undivided parcel... to inquire whether a piece of it has been taken.” And when a New Jersey landowner contended that the “parcel as a whole” consisted of only those fourteen acres of lots for which a federal permit had been requested and denied, the United States Court of Claims reinforced its earlier decisions by holding that the entire forty-five acre purchase had to be considered in determining whether the owner had been deprived of all economically viable use.

140 See id. at 549 (“[E]xisting authority [within the Court] compels us to reject MacLeod’s contention that the denial of the right to use a portion of a parcel of property invariably constitutes a taking, irrespective diminution of value, or denial of the highest and best use of property.”); see Penn Central Transp. Co. v. City of New York, 438 U.S. 104, 124 (determining whether or not an economically viable use of property remains is an ad hoc fact based inquiry); see also MacLeod v. County of Santa Clara, 749 F.2d 541, 549 (“The denial of [MacLeod’s permit] merely prohibited an additional expected use of the property. This is not enough to allow us to conclude that it interfered with MacLeod’s investment-backed expectations, extinguished a fundamental attribute of ownership, or prevented MacLeod from deriving a reasonable return on the property.”).

141 See id., 749 F.2d at 547.

142 Id.


144 Id. at 1204.


146 Id. at 334 (noting that the court overruled a state court case in which the court looked to only a portion of the regulated property as the law does not permit such division of a parcel into smaller units for the purpose of a taking analysis).

147 Ciampitti v. United States, 22 Cl. Ct. 310 (1991) (treating the relevant parcel to be the entire 45 acre purchase rather than the 14 acres subject to a wetlands restriction). The court
2. Status and Policy Implications of the Horizontal Dimension

Courts throughout the country have embraced this vision of the relevant parcel, with few exceptions. Where contiguous acreage is purchased at one time, the entire acreage is considered as a single unit of ownership for regulatory takings analysis. Even though some portions of the unit are later forced to remain vacant and economically unproductive due to governmental restrictions, the takings denominator continues to be the original tract. Courts have consistently denied an owner the option of identifying the relevant interest solely as the regulated portion, notwithstanding the fact that the regulation applies to subdivided lots, separate tax lots, multiple use lots, or the final lots of a development scheme facing a zoning reclassification.

This analytical position provides clear jurisprudential advantages. It is a rule that leads to certainty and exactitude when applied since the denominator is precisely demarcated. Diminution analysis is performed against the relevant parcel of the original purchase, the metes and bounds of which have a factual security unparalleled by other jurisprudential theories. Since the jurist deals with only a single instant of time, confusing operations of subtraction and addition (of contiguous land mass that the owner either purchases or sells off at a later period of time) are avoided. The low administrative costs associated with the predictability of this rule would also

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141 See supra at notes 178-191 and accompanying text.
142 See Kelly v. Tahoe Regional Planning Agency, 855 P.2d 1027, 1035 (Nev. 1993) (ruling that there was no taking where four out of 39 of Kelly's subdivided lots were precluded from development).
143 See State Dep't of Env't Regulation v. Schindler, 604 So.2d 565, 568 (Fla. Dist. Ct. App. 1992) (refusing to view 1.85 acres of a 3.5 acre parcel as separate merely because the land was submerged). The court noted that the property had always been considered one unit even though only part of it was submerged. Id.
144 See Bevan v. Brandon Township, 375 N.W.2d 37 (holding that two lots which were purchased at different times by plaintiff, and which carried separate tax identification numbers, were not considered separate parcels for takings analysis). The court noted that "[a]rtificial device[s]," such as tax identification numbers and separate deeds . . . are not controlling in determining whether enforcement of the ordinance in this case would amount to a taking." Id. at 397.
145 See Bernardsville Quarry v. Borough of Bernardsville, 608 A.2d 1377, 1389 (upholding an ordinance which limited the depth to which land could be quarried). The court noted that the property could be put to a variety of other uses which the ordinance would not effect and would be of value to plaintiff. Id. at 242.
146 See Thompson v. Village of Hinsdale, 617 N.E.2d 1227 (1993) (denying a takings claim even though the parcel had been subdivided into 3 separate lots and a new zoning ordinance would not allow development of one of the lots). The court reasoned that plaintiff still had an economic viable use of the property; he could build on two of the lots. Id. at 886.
147 See Shleich, supra note 3.
generate favorable market pressures. If the original purchase defines takings' relevant parcel, the investor can then calculate with some exactitude the parameters of potential regulatory action. The purchase itself would provide notice to the investor of the scope of regulatory loss that is possible at that time and at each interval thereafter. Notions of justice and fairness, which so preoccupy many courts in this situation, also receive due consideration under this legal position. Cries of unfair treatment are muffled to the extent that an owner gains a value, or realizes an overall profit, from the initial investment. The developer who made a considerable windfall from the beginning phases of her development can be viewed as having less of an ethical foundation for complaining merely because she is precluded from building on ten remaining wetland acres.

Neither federal nor state law has ever guaranteed the free use and economic viability of each square foot of land from the moment of acquisition until the moment of sale. Indeed, countless decisions have emphatically reiterated the legal doctrine that an owner is not constitutionally entitled to the highest and best use of the property. Besides being an advantaged player in the free market system, the owner likely received numerous governmental benefits from the original purchase itself, including favorable tax incentives, the implicit value of a surrounding regulated environment, and the advantages of living in a civilized community. Reciprocity there-

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155 Under diminution analysis, investors must note that high decreases in value are normally required to claim a regulatory takings under Holmesian mathematics. See _Lucas_, 505 U.S. at 1019 n.8 (recognizing that in at least some cases the landowner with 95% loss will get nothing); _see also_ _Hadacheck_ v. _Sebastian_, 239 U.S. 394 (1915) (allowing regulation resulting in 87.5% diminution in property value); _Jentgen_ v. _U.S._, 657 F.2d 1210 (finding no taking even though owner could only develop 40 acres out of 101 acres).


159 See _Buck_, supra note 3, at 1310.

160 See _Pennsylvania Coal_, 260 U.S. 393 (1922).
fore lends its utility to the jurisprudence. At minimum, the privileges afforded owners substantially mute their pleas for assistance. As can be assumed by the widespread adoption of this legal position, notions of fairness and justice respond quite sympathetically to this current majority view of the parcel as a whole.

3. Bisecting the Horizontal Plane

The nonsegmentation of the horizontal dimension has spawned some limited controversy among jurists. Two alternative perspectives have developed in the last two decades as a response to the "original purchase" rule. In the first instance, the admonitions of Justices Rehnquist and Scalia regarding the sanctity of the economic viability of land generated considerable interest among landowners and scholars. Their jurisprudence of conceptual severance was adopted at the beginning of this decade by two federal courts in highly controversial opinions. While the precedential value of these cases has been extremely limited, they rekindled the determination and imagination of a new generation of property holders. Secondly, some courts have discarded the "original purchase" rule in split zoning cases, arguing that in these cases the government itself forces separate denominators upon the owner.

Justice Rehnquist has unfailingly been willing to define the relevant parcel as something less than the originally purchased tract. In both Penn Central and Keystone, Justice Rehnquist, in dissent, pursued the end of vertical segmentation. In each case, he was willing

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161 See supra at note 123.
162 Fee, supra note 101 at 1561.
163 See supra note 3; Frank Michelman, Takings, 1987, 88 COLUM. L. REV. 1600 (1988);
164 See infra at notes 179-191 and accompanying text.
165 See infra at 197-214.
167 In Penn Central, Justice Rehnquist argued in his dissent that the air space above Grand Central Terminal was a property right in itself which was destroyed when the Terminal was designated as a landmark. Penn Central, 438 U.S. at 141-43 & n.5 (Rehnquist, J., dissenting) (citing U.S. v. Causby, 328 U.S. 256). Rehnquist went on to contend that the ordinance did not fall within the two exceptions which can prevent the destruction of property from becoming a taking. Id. at 144. He noted that the City was not abating a nuisance since the use was not "dangerous to the safety, health, or welfare of others." Id. at 145. Further, there was no average reciprocity of advantage in this case since the plaintiff must bear a substantial loss while receiving no comparable benefit. Id. at 147. Under this analysis, Justice Rehnquist would have found a taking. Id. at 144.

In Keystone, Rehnquist forwarded a similar view. There he determined the relevant parcel was the support estate and this was required to remain undeveloped under the Subsidence Act. Keystone, 480 U.S. at 519 (Rehnquist, C.J., dissenting). Rehnquist reasoned that "where the es
to accept the complete denial of use on one segment of the whole as a unconstitutional takings. Beginning with Keystone, he formulated his position regarding the relevant parcel by analogizing to physical invasion and appropriation cases. Recognizing that a segment of a larger parcel may be taken where the government physically invades that segment, Rehnquist argued that the same should be true when the regulation zeroed out all value from a portion of the whole. From the owner’s perspective, the interest is destroyed completely, the impact on property rights is just as significant, and all strands of that particular segment are lost. While Justice Rehnquist acknowledged Penn Central’s conclusion that takings jurisprudence did not divide a single parcel into discrete segments, he emphasized that the Court gave no guidance on how one is to distinguish a “discrete segment” from a “single parcel.” He was perfectly willing to allow horizontal division of the original purchase, especially when the segment represents an “identifiable and separable property interest.” As he counseled, where the property interest “is both separable and of value in its own right, it is appropriate to consider the effect of regulation on that particular property interest.”

Adopting Rehnquist’s position, and applying it to the horizontal dimension, the Federal Circuit and the United States Court of Claims delivered two highly publicized and controversial decisions towards the end of the 1980s. In both cases, these federal courts rejected the majority view that the relevant parcel be defined by the entire scope of the original purchase. The decisions vigorously attempted to distinguish earlier decisions by reinterpreting the bulk of the Supreme Court’s prior rulings. The judges highlighted the ex-

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See Keystone, 480 U.S. at 515-17 (Rehnquist, C.J., dissenting).

Id. at 516 (Rehnquist, C.J., dissenting).

Id. at 517 (Rehnquist, C.J., dissenting).

Id. at 516 (Rehnquist, C.J., dissenting).

Id. at 517 (Rehnquist, C.J., dissenting).

Id. at 517 n.5 (Rehnquist, C.J. dissenting).

Id. at 517 (Rehnquist, C.J. dissenting).

Id. at 520 (Rehnquist, C.J. dissenting).

The valuation of the relevant parcel was addressed in Florida Rock Indus. v. United States, 791 F.2d 893, 904-05 (Ct. Cl. 1986) and Loveladies Harbor v. United States, 15 Cl. Ct. 381 (1988).

This view reflected the policy outlined in President Reagan’s Executive Order 12,630 on takings and the implementing Attorney General’s Guidelines of June 30, 1988. This order required all federal regulations to be approved by agencies and the Attorney General. Id. at 443-444. (Governmental Action and Interference with Constitutionally Protected Property Rights, Executive Order No. 12,630, 3 C.F.R. 554 (1988), reprinted in 5 U.S.C. §601 (1988); see also Wise, supra note 3.
pectation interests of the landowners and underscored the economic plight caused by the regulations. Consideration of the entire original tract was dismissed; both decisions focused their takings analysis solely on those portions of the whole for which the owners sought the permits necessary for their intended uses.179

In Florida Rock Industries v. United States, the Federal Circuit ruled that the government’s refusal to allow limestone mining on 98 out of the owner’s originally purchased 1,560 acre tract constituted a taking of those 98 acres.180 The court inferred that the government was unlikely to grant development approval for the remaining portion of the 1,560 acre tract, and therefore concluded that it would be ludicrous to include such acreage in the takings calculation.181 The owner was thus allowed to carve out a particular piece of the whole and have it separately examined for takings analysis by arguing that the government’s anticipated handling of the rest of the original purchase would mirror its handling of the ninety-eight acre portion. Even though the court admitted that the entire 1560 acre parcel had not necessarily been stripped of all economically viable use,182 it allowed the owner to anticipate potential litigation and self-identify the relevant parcel.183 Ignoring the significant body of precedent to the contrary, the court merely accepted the lower court’s definition of the relevant parcel.184 By excluding the whole of the originally purchased tract from its consideration, the court enabled owners to claim compensation for a horizontal segment even though other parts of the original purchase might retain considerable economic value.

In Loveladies Harbor v. United States, the Claims Court refused to delineate the “parcel as a whole” as all 250 acres comprising the original purchase, but rather determined that the relevant parcel included only the 12.5 acres of wetlands subject to permit requirements.185 The court first distinguished its prior decision in Deltona,186

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179 See Florida Rock, 791 F.2d at 904-905; Loveladies, 15 Cl. Ct. at 393.
180 See Florida Rock, 791 F.2d 893.
181 Id. at 904 (“Here the Army engineers considered only 98 acres. As to the rest, it is and for the immediate future, remains illegal to mine without a permit in the only fashion Florida Rock considers feasible.”).
182 See id. at 904-905 (stating that it hoped the takings award may cause the government to reconsider whether the continued protection of the balance of the acreage was worth the price to the public fisc).
183 See Fee, supra note 101, at 1549.
184 See Florida Rock, 791 F.2d at 905-906.
185 Loveladies, 15 Cl. Ct. at 392. First, the court narrowed the relevant parcel to the 57.4 acres still owned by the plaintiffs, then further limited the relevant parcel by determining that 38.5 of these acres could not be developed because the state had already denied the necessary permits for them. Of the 18.9 acres that remained, 6.4 acres were either not affected by the permit denial, not claimed to have been taken, or were not contiguous to the 12.5 acre parcel. Id. at 393. Arguing that the Supreme Court in Penn Central had held that “noncontiguous properties not
explaining that case had failed "to require a rigid rule that the parcel as a whole must include all land originally owned by plaintiffs." Even though the owner's original 250 acre purchase included economically viable land, the court, citing Keystone and Florida Rock, limited its review to the value of that property which the owners held when the taking was said to have occurred (57.4 acres). The court then excluded the owner's wetland holdings not mentioned in the claim, an additional 38.5 acres of the plaintiffs' holdings. Finally, contending that Penn Central forced the conclusion that non-contiguous properties not directly at issue cannot be said to fall within the parcel as a whole, the court excluded 6.4 acres of non-wetland holdings which were not adjacent to the regulated portion. Accordingly, the court ruled that the relevant parcel for takings analysis was the 12.5 acre portion subject to federal wetlands regulation.

While Florida Rock and Loveladies received the enthusiastic applause of landowners, the immediate support of their attorneys, and the close scrutiny of academics, the cases had little real impact on altering the judicial preference for defining takings' relevant parcel as the entirety of the original tract. Many of the legal positions ar-

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ticulated in the two cases lacked any real analytical development. The courts used conclusory statements to arrive at many of their positions without providing legal or jurisprudential support for their theories. They also manipulated case precedent to fit their opinions, by misapplying dicta of Penn Central and misreading the holding of Keystone. While landowners had definitely found allies in these two courts, the precedential value of their holdings was minimized. The long judicial history and the solid jurisprudential underpinnings of the "original purchase" rule easily withstood the challenges provided by these two rulings.

Even though most courts continued to use "original purchase" as the appropriate horizontal measure of the relevant parcel, Florida Rock and Loveladies kindled a new excitement among landowners concerning the possibility of narrowing the takings denominator. Landowners attacked takings' expansive measuring stick with renewed energies. They argued for numerous exceptions to the traditional rule, waiting patiently for the Supreme Court to expressly limit the relevant parcel's dimensions. This excitement reached new levels first with the Court's addition of several new justices and then with its decision to review the ruling of the South Carolina Supreme Court in Lucas v. South Carolina Coastal Commission.

Lucas made the difficult task of defining the relevant parcel for takings calculations even more crucial. The Supreme Court agreed that David Lucas had suffered a taking of his beachfront lots because the government's coastal regulations had denied him "all econom-

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199 See Loveladies, 15 Cl. Ct. at 393. The court misapplied Penn Central when it concluded that Penn Central is authority for the position that noncontiguous properties not directly at issue cannot be said to fall within the parcel as a whole. Presumably this mistake was derived from the fact that Penn Central only dealt with the company's city tax block rather than all of its holdings in the city.

194 See id. at 392. The court misread Keystone when it interpreted the case as holding that the parcel as a whole was only the value that remained in the property when the taking occurred.

195 See supra note 78. After Penn Central there was an influx of cases before the state and federal courts. The "dry spell" that occurred following Pennsylvania Coal had vanished.

196 Landowners began arguing for ad hoc, noncontiguous evaluations that would look at the parcel at the time of regulation. See Wise, supra note 3; Robert M. Washburn, Land Use Control, the Individual, and Society: Lucas v. South Carolina Coastal Council, 52 Md. L. Rev. 162 (1993); Rose-Ackerman, supra note 28; Schleich, supra note 3; Fee, supra note 101; George W. Miller & Jonathan L. Abram, A Survey of Recent Takings Cases in the Court of Federal Claims and the Court of Appeals for the Federal Circuit, 42 CATH. U. L. Rev. 863 (1993).

197 The Court has been shifting towards a greater property-rights orientation. The Rehnquist-Scalia idea of the relevant parcel is becoming the majority view and is likely to gain support from recent changes on the Supreme Court. Since 1990, Justices Ginsberg and Breyer have been appointed and Justice Blackmun has retired. Justice Ginsberg has been a consistent vote for the moderate wing of the Court on economic and social issues. More recently, Justice Breyer has expressed a strong commitment to the personal freedoms in the Bill of Rights.

cally beneficial or productive use" of his land. Typical police power concerns would no longer provide sufficient justification for the restriction if the owner's economic interest were so drastically effected. The Court thereby penned a new _per se_ test: when a landowner is denied an economically viable use for the property, just compensation must be guaranteed.

This new legal standard brought renewed emphasis to the determination of the relevant parcel. As Justice Scalia noted, the horizontal dimensions of the relevant parcel can dictate the takings calculus. However, the Court once again could not agree upon how to determine the scope of the relevant parcel. Justice Scalia under-

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190 Id. at 1015. In 1986, David Lucas purchased two beachfront lots, planning to develop each as a single-family residence. Two years after his purchase, the South Carolina Legislature enacted the Beachfront Management Act. This Act prohibited construction of any permanent residential structure within a certain distance of the high water mark. Lucas' lots were within the beachfront setback and therefore his development plans were destroyed. He claimed that the total value of his property had been taken, roughly $1,200,000. _See_ Lucas v. South Carolina Coastal Council, 404 S.E.2d 895 (1991).

191 Lucas, 505 U.S. at 1015. Justice Scalia stated that:

> We have, however, described at least two discrete categories of regulatory action as compensable without case-specific inquiry into the public interest advanced in support of the restraint. The first encompasses regulations that compel the property owner to suffer a physical 'invasion' of his property. In general... no matter how minute the intrusion, and no matter how weighty the public purpose behind it, we have required compensation.... The second situation in which we have found categorical treatment appropriate is where regulation denies all economically beneficial or productive use of land.

_id. at 1015_. Scalia additionally limited the nuisance exception in finding that land use restrictions do not always effect a taking if they substantially advance a legitimate state interest. _Id._ at 1022-23 (citing _Nollan v. California Coastal Comm'n_, 483 U.S. 825, 834 (1987)).

192 _See_ _id._ at 1015.

193 _Id._ at 1003. In _Lucas_, the Court evaluated several options for determining the relevant parcel. The majority suggested that the definition of property is "in the... background principles of the State's law of property and nuisance." _Id._ at 1029. The Court attempted to expand on this definition by explaining that the definition of the parcel could be found in the owner's reasonable expectations that were shaped by the State's law of property — more specifically whether and to what degree the State's law had accorded legal recognition and protection to the particular interest in land which had been diminished. _Id._ at 1016 n.7. Justice Kennedy in his concurring opinion suggested a broader definition of the relevant parcel. He asserted that the background principles of nuisance law were too restrictive in today's modern society. He advocated that the definition of property be defined by the owner's reasonable expectations' no matter what their source. _See_ _id._ at 1034-36 (Kennedy, J., concurring). Ultimately, the Court avoids answering how to address the issue of defining property. _See_ _id._ at 1017. Justice Blackmun, in his dissenting opinion, stated that he felt the petitioner could still "enjoy other attributes of ownership, such as the right to exclude others, "one of the most essential sticks in the bundle of rights that are commonly characterized as property." _Id._ at 1044 (citing _Kaiser Aetna v. United States_, 444 U.S. 176 (1979)). He continued, stating that the petitioner also "retain[ed] the right to alienate the land, which would have value for neighbors and for those prepared to enjoy proximity to the ocean without a house." _Id._ at 1044-45.

In _Keystone Bituminous Coal Ass'n v. DeBenedictis_, the Court determined that the "support estate" was "merely a part of the entire bundle of rights possessed by the owner." 480 U.S. at
scored this fact when he stated that “[r]egrettably, the rhetorical force of our ‘deprivation of all economically feasible use’ rule is greater than its precision,” because the rule does not “make clear the ‘property interest’ against which the loss of value is to be measured.” This, however, did not prevent Scalia from attempting some definition. Borrowing heavily from Justice Rehnquist’s earlier positions, Scalia, writing for the majority, suggested that the answer to defining the relevant parcel could lie in how “the owner’s reasonable expectations have been shaped by the State’s law of property.” The parcel unit would be delineated by the degree to which state law had accorded legal recognition and protection to the particular interest in land suffering the diminution in value. While Scalia’s rhetoric applies most clearly to the vertical dimension, with its possible segmentation into support, surface and air estates, he expressly employed the same in an example involving possible horizontal segmentation. Scalia’s dicta leave the clear impression that he would favor requiring compensation in many cases where regulation denies all use of a portion of a larger parcel. Notably, Lucas provides little analytical basis in support of, or for the application of, this position. State common laws generally do not recognize differing “horizontal” estates or address how to treat the subdivision of large tracts for takings analysis. In addition, except for the limitations of minimum lot size, an owner is usually permitted to sever horizontally any parcel into multiple smaller fees. If each of these new fees could serve as the regulatory takings denominator for their own use limitation, then owners would be able to self-select the limits of police power

501. Thus, the Court concluded that the support estate’s destruction merely eliminated one segment of the total property. The dissent, however, “characterized the support estate as a distinct property interest that was wholly destroyed.” Lucas, 505 U.S. at 1054. (citing Keystone, 480 U.S. at 519).

In Lucas, Justice Blackmun noted further that, “state courts historically have been less likely to find that a government action constitutes a taking when the affected land is undeveloped.” Id. at 1059 (Blackmun, J., dissenting). Justice Stevens added, “[b]ecause of the elastic nature of property rights, the Court’s new rule will also prove unsound in practice. In response to the rule, courts may define ‘property’ broadly and only rarely find regulations to effect total takings.” Id. at 1065 (Stevens, J., dissenting); see D. Benjamin Barros, Note, Defining “Property” in the Just Compensation Clause, 63 Fordham L. Rev. 1853, 1865-68 (1995); Frank, supra note 27; Haffner, supra note 3.

Lucas, 505 U.S. at 1016 n.7.

Id. at 1017 n.7.

See id.

See id. Justice Scalia argues that:

When, for example, a regulation requires a developer to leave 90% of a rural tract in its natural state, it is unclear whether we would analyze the situation as one in which the owner has been deprived of all economically beneficial use of the burdened portion of the tract, or as one in which the owner has suffered a mere diminution in value of the tract as a whole.

Id. at 1016 n.7.
legislation by tailoring self-serving narrow denominators. Divisions could be factored to isolate the impacts of present and anticipated future regulation and effect total wipeouts of property value requiring compensation under Lucas. The implications of this scenario likely reach beyond what even Scalia would find acceptable, threatening the very fabric of government’s regulatory network. As has been suggested, Scalia most likely borrowed this notion of employing a common law analysis from Rehnquist’s dissent in Keystone without fully judging how it would apply to the horizontal plane.

4. Split Zoning Cases

Barring the theoretical preferences of Rehnquist and Scalia and excluding the few lower court cases which adopted their jurisprudential leanings, the split zoning cases provide the only notable exception to the original purchase rule. These cases characteristically involve a single owner with multiple acreage and an ordinance that creates several distinct zoning areas within that acreage. The regulation thus isolates particular portions of an owner’s holdings and poses that there are good reasons for treating the areas differently. When faced with a takings challenge involving only one of the designated zoning areas, courts must consider whether to measure the effect of the restriction on that limited portion or on the whole of the owner’s contiguous property.

American Savings & Loan Ass’n v. County of Marin is illustrative. American Savings acquired sixty-eight acres of land in Marin County in 1973 by bankruptcy sale. In 1974, the county adopted a plan that rezoned forty-eight of the acres as “urban open space” and the remaining twenty acres as multiple residential use. American Savings sued, alleging that the zoning ordinance resulted in an unconstitutional taking of its land, destroying its development plans for the forty-eight acre portion. Acknowledging that American Savings’ contiguous land was zoned to allow a substantially high density, the trial court ruled that for “taking” purposes all of the plaintiff’s contiguous

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208 See Fee, supra note 100, at 1550. Allowing property owners to define the relevant parcel without any limitation would lead to a definition of the “relevant interest as precisely those rights that were abrogated — a complete negative easement in every case.” Id.

209 See id. at 1556-57 n.88. In Keystone, Rehnquist suggested that a parcel could be divided if the State had defined the regulated portion as a separate estate. As Rehnquist noted in his dissent, “where the estate defined by state law is both severable and of value in its own right, it is appropriate to consider the effect of regulation on that particular property interest.” Keystone Bituminous Coal Ass’n v. DeBenedictis, 480 U.S. 470, 520 (1987).

210 Both Justice Scalia and Rehnquist have shown that they generally side with the property-rightists on this issue of takings jurisprudence; however, it is likely that both Justices would object to being called property-rightists.


212 See id. at 367.
land was to be considered as a single parcel. The trial court emphasized that the portions were legally a single parcel because they were contiguous, owned by the same party, and intended for the same use. Since the combination of the two zoning designations merely lowered the overall value of the parcel rather than destroying it completely, the court held there was no taking.215

On appeal, American Savings maintained that the validity of the ordinance should be judged separately by the effect of the particular zoning designation on the 48 acre segment. Because the two pieces were zoned differently, it argued the effect of the ordinance must be judged differently.214 If one portion's unique zoning deprived it of any beneficial use, then an unconstitutional taking occurred. The United States Court of Appeals for the Ninth Circuit agreed, reasoning that any deprivation by a non-uniform ordinance of a portion of contiguous property which is otherwise economically viable requires that the zoning be evaluated separately for takings purposes.215

Other cases have lead to similar results. A California Court of Appeal ruled in *Aptos Seascape Corp. v. County of Santa Cruz*216 that contiguous acreage under a single owner could be segmented for takings analysis if the acreage were subject to different zoning restrictions. Whether the challenged ordinance created two separate parcels for takings purposes by adopting different zoning designations for each portion was a question of fact. The court emphasized that when government action divides contiguous property under single ownership into separate zones the restriction of development in one of those zones may lead to a takings.217 Several years later, another California Court of Appeal refused to treat a 1.7 acre portion of an original 8.5 acre tract as "part of the whole."218 The court emphasized that takings precedent "does not demand the entire 8.5 acre parcel be treated as a whole,"219 where the 1.7 acre portion was previously an economically viable unit independent of the larger

215 *See id.* at 368. The court elaborated: "[W]here a single party has a single contiguous parcel of property affected by a community zoning program, and where that program permits a reasonable profitable use of the property taken as a whole, that no claim has been made for an unlawful taking...." *Id.*

214 *See id.* at 368.

216 *See id.* at 369-71. The court distinguished single parcel analysis for the award of severance damages in condemnation cases, noting that in these cases, the relevant parcel is determined by the law of eminent domain while in inverse condemnation cases the parcel is determined by takings jurisprudence. It also distinguished *Gorf* on the basis that the strip affected by setback requirements was not economically viable when separated from the whole lot. *Id.* at 371 n.6.

217 *See id.* at 198. This court, like *American Savings*, took time to distinguish *Penn Central*, noting its focus on the vertical dimension, and its factual differences; namely, it did not involve contiguous property for which different zoning designations were adopted. *Id.*


219 *Id.* at 745.
parcel. Similarly, in *Fifth Avenue Corp. v. Washington County*, the Supreme Court of Oregon cautioned that a parcel might be divided for takings analysis into two separate units when the government had adopted separate zoning classifications for each. Although the owner had purchased a twenty acre parcel for development as a shopping center, the county's comprehensive plan divided the lot into several separate zones. In dicta, the court divided the property analytically into those areas classified as commercial or residential and those classified as greenway or transit station. As to the second, the court advised that a cause of action for inverse condemnation could be stated and that diminution analysis would be individually applied.

Significantly, all of the courts in these cases take care in distinguishing their factual setting. Noting that their position may at first seem inconsistent with general principles governing takings jurisprudence, the courts carefully distance themselves from prior precedent to highlight the distinct nature of their inquiry. For example, they may argue that while *Multnomah County v. Howell* asserted that "the reasonableness of a zoning ordinance must be tested by its effect on the whole of the . . . contiguous property, not simply . . . on a portion thereof," and while *Penn Central* stated that "taking jurisprudence does not divide a single parcel into discrete segments," both cases involved instances where the entire subject property was covered by a uniform restriction. In *Multnomah County*, all of the owner's thirteen acres were zoned agricultural-residential; in *Penn Central*, the challenged government action did not divide the property into discrete segments.

As the split-zoning decisions stress, the central distinguishing question is whether the governmental regulation itself creates two separate parcels for taking purposes by adopting different zoning designations for each. In effect, the courts suggest that when the government acts to create separate use zones pursuant to its notion of the public good, it implicitly creates two new areas for takings analysis. The government may not maximize its benefit in both directions (two parcels for usage purposes, but one parcel for diminution calculus) by placing all the costs on the private owner. In short, the message which the courts seem to deliver is that the government must reap what it sows.

221 See id. at 61.
224 It is interesting to note that while some of these cases attempt to cite *Nectow v. City of Cambridge*, 277 U.S. 183 (1928), as precedent, they do so incorrectly. *Nectow* was resolved under arbitrary and capricious standards; the single/double parcel issue was not considered.
While this analysis embodies a certain intuitive charm, it is grounded neither in sound logic nor in cohesive jurisprudence. The courts' naiveté manifests itself at several points. Most notably, it surfaces in the assumption that differential zoning decisions require that the areas be evaluated separately for other purposes. It is not uncommon for a single parcel to receive zones for separate use and yet have those separate use zones receive common treatment in a whole host of other areas, such as taxation and minimum lot requirements. Differential zoning within a single parcel is the result of certain policy based decisions made by governmental entities. These policies have little, if anything, to do with the diminution analysis of regulatory takings. It is eminently logical to have sanitation and congestion concerns dictate separate use zones on a single parcel, yet at the same time measure the effects of a wetlands designation on the value of the parcel as a whole.

Regardless of whether benefits or burdens are shifted between the two areas as a result of the zoning classification, the overall regulatory calculus remains constant. Diminution in value is rightly measured against the original tract, rather than focusing the math on the later restricted area. Although the court in American Sav. & Loan asserted that "it seems obvious the question of whether two related parcels will be treated as one in the development process is not an issue separate and apart from the question about whether there has been a 'taking,'" it should be clear that separate use designation does not split a parcel in two for takings purposes. Fortunately, decisions like American Savings & Loan are rare. Indeed, commentary on these decisions are much more prevalent than the court adoption of the same. While an ad hoc analysis of the particular circumstances can be decisive, courts continue to maintain their focus on the parcel's original entirety.

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25 See generally, Broadwater Farms Joint Venture v. United States, 35 Fed. Cl. 232, 240 (Ct. Cl. 1996) (stating that because property is taxed as individual lots does not preclude a finding that there is a contiguous parcel).
26 See Twain Harte Assoc. Ltd. v. County of Tuolumne, 265 Cal. Rptr. 737, 745 (Ct. App. 1990) (explaining that the parcel was split into commercial zone and open space in order to preserve the land); American Sav. & Loan Ass'n v. Marin County, 653 F.2d 364, 367 (9th Cir. 1981) (explaining that the split zoning was due to particular environmental problems and concerns); Aptos Seascape Corp. v. County of Santa Cruz, 188 Cal. Rptr. 191 (Ct. App. 1982), appeal dismissed, 464 U.S. 805 (1983) (applying separate development standards to a single parcel in order to preserve 70 acres of beachlands); Fifth Ave. Corp., 591 P.2d 50 (Or. Ct. App. 1978) (revising of comprehensive plan was to preserve the intent and purpose of the original plan).
27 That is assuming that the governmental action is not arbitrary or capricious.
28 See Twain Harte, 265 Cal. Rptr at 745, quoting American Sav. & Loan, 653 F.2d at 364.
29 See, e.g. Terry Rice, What Property Interests Merit Taking Protection?, Land Use Law (February 1991) (advocating that when there are two classifications on one parcel, one of the ad hoc factors considered should be a density transfer scheme because this allows greater densities on the less restricted parcel).
5. The Ad Hoc Factor Inquiry

Given the conflicting and often irreconcilable approaches which courts take to determine the appropriate definition of the unit of parcel, many courts have recently attempted to resolve the issue by engaging in an ad hoc factual inquiry. These courts amass what they consider to be the relevant factors in the case before them and then proceed to utilize these factors to calculate the parcel size appropriate for takings purposes in the case at hand. This approach found its first prominent voice in Kaiser Development Co. v. City of Honolulu. Ostensibly, the court weighed the factor that the 6000 acre parcel was originally held as a single tract against other factors: the 200 acre area had been separated from the whole by a road; that it had not yet been developed, it had been zoned differently, and that it had been designated for a different land use by the general plan.

Perhaps the most well-known advocate for an ad hoc approach has been the United States Claims Court. In its often cited opinion of Ciampitti v. United States, the court counseled that any takings analysis should "identify the parcel as realistically and fairly as possible, given the entire factual and regulatory environment." Whether the parcel should be segregated and viewed separately or considered as a whole depends upon such considerations as the degree of contiguity, the dates of acquisition, the extent to which the parcel had been treated as a single unit, and the extent to which the protected area enhance the value of the remaining lands. Such a multi-factor analysis should disclose the equities inherent in the land scheme and direct a reasoned determination of the relevant parcel. Under this approach, a proper takings analysis would set forth detailed factual findings which would guide the court toward calculating the proper geographic dimensions of the taking area.

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3. Id. at 947-48.
5. Id. at 319.
6. Id. at 318.
7. For a detailed listing of the factors one court took into consideration see Reahard v. Lee County, 968 F.2d 1131, 1136 (1992). The court stated that a proper takings analysis would consider the following factors:
The inherent appeal of the ad hoc inquiry is that the court appears to expressly apply justice to a specific factual setting. Individuals sometimes seem to presume that the more detailed and splintered the court's investigation of factors the more inherently fair is its subsequent holding. In part, such detailed investigations reflect a basic legal tendency to make certain that no stone is unturned, that no surprises lurk in the waiting, and that no factor has been overlooked by the court. Exhaustive research replaces jurisprudence and the accumulation of data replaces legal analysis. As the court winds its way through the detailed checklist of factors, the correctness of its position appears enhanced. The answer to its takings inquiry is not merely the result of a single-dimensional investigation, but rather a multi-layered smorgasbord that, if properly analyzed, will uncover the proper unit of parcel.

Unfortunately, this strategy does not provide the courts with a panacea for the takings problem. There is no yellow brick road leading the conscientious jurist to the "correct" denominator. In reality, the multi-factor case-by-case approach increases uncertainty by allowing courts to manipulate the factors toward their own predetermined conclusion. This approach effectively permits a court to shield itself from the policy ramifications of its decision by switching the observer's focus to separate identifiable facts. Without the gestalt of an overriding policy orientation, takings inquiries quickly dissolve into random accumulations of component-based biases. That jurists or

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(1) the history of the property - when was it purchased? How much land was purchased? Where was the land located? What was the nature of title? What was the composition of the land and how was it initially used?; (2) the history of the development - what was built on the property and by whom? How was it subdivided and to whom was it sold? What plats were filed? What roads were dedicated?; (3) the history of zoning and the regulation - how and when was the land classified? How was use proscribed? What changes in classifications occurred?; (4) how did the development change when title passed?; (5) what is the present nature and extent of the property?; (6) what were the reasonable expectations of the landowner under state common law?; (7) what were the reasonable expectations of the neighboring landowners under state common law; and (8) perhaps most importantly, what was the diminution in the investment-backed expectations of the landowner, if any, after passage of the regulation.

Id. at 1136.

237 See John M. Groen, The Relevant Parcel Issue, 872 ALI-ABA 167, 182 (1993). Groen lists several factors that the court will use to determine the relevant parcel. When the court chooses an ad hoc approach it includes the following factors throughout its analysis: (1) contiguity of properties; (2) unity of use; (3) physical characteristic or natural boundaries; (4) historical considerations; (5) how the land has been treated by the landowner, as a single parcel or as separate parcels; (6) how the land has been treated by the government; (7) dates of acquisition; (8) terms of purchase and financing; (9) degree of legal recognition and protection of the particular property interests under state law; (10) degree to which the particular property is an identifiable and severable property interest; (11) whether the particular interest is a fundamental attribute of ownership; (12) whether the portion has value and is economically valuable apart from the larger parcel; (13) and any other fact with may have bearing on the issue.
observers may convince themselves of the objectivity of their investiga-
tions is not surprising; self-deception pervades the human species
and is an integral part of the law.235

Yet, attention to detail does not provide an enhanced manage-
ment of the equities. Reliance on multiple factors can be manipulated in opposite directions, depending upon the will of the court —
either toward viewing the parcel expansively or toward viewing it
narrowly. As previously mentioned, the District Court of Hawaii
ruled that two adjacent parcels should be considered separately for
takings purposes after applying an ad hoc factual inquiry.239 However,
applying a very similar list of factors to a very similar factual set-
ting, the Court of Federal Claims held that two contiguous lots
should be treated as a single parcel for takings purposes.240

Such wizardry is the net result of this ad hoc approach. Courts
are empowered to reach any result. The factors provide the neces-
sary tools to construct any desired outcome. Takings decisions de-
mand more. They affect and define the very fabric of our society and
command the most reasoned jurisprudential foundation. This is an
area where the individual predilections of the trier of fact should be
constrained for overriding societal concerns. Sound policy is not the
product of either judicial whim or political expediency.

IV. A BIOLOGICAL AND CULTURAL VIEW OF TAKINGS JURISPRUDENCE

Current takings analysis begins from a peculiar vantage point.
Reflecting the particular world-view of the frontier and the Judeo-
Christian male, takings analysis starts from a particularly American
view of property: one's land is one's castle. According to this view,
the individual is master over his/her defined space. The American
image of the rugged, self-sufficient individual fosters notions of envi-
ronmental dominion and control. What happens on, under, or
above one's parcel is a matter of individual concern; only rarely,
should an "outsider's" interest be allowed to invade this sacred area.

239 See Kaiser Development Co. v. Honolulu, 649 F. Supp. 926, 947-48 (9th Cir. 1986), cert. de-
nied, 499 U.S. 947 (Apr. 1, 1991) (No. 90-1108) (holding that the two parcels were separate be-
cause the property was naturally divided by a road, the owners had separate development plans
and the city had treated the two parcels separate for zoning and planning purposes); see also
American Savings & Loan Assn v. County of Marin, 653 F.2d 364, 369 (1981) (concluding that
the two contiguous parcels were separate since the owner and county had treated them as sepa-
rate for zoning and development purposes).
240 See Ciampitti, 22 Cl. Ct. 310. Ciampitti had purchased 45 acres with the intent to separately
develop each of the lots. The court found that there was not a taking because he had purchased
the land under a single financing plan. Id. at 320. Additionally, the court noted that Ciampitti
was aware of the risk that the land was subject to government wetlands protection well before he
purchase it and he failed to take the necessary precautions to insure that he would be able to
develop the land. Id. at 321.
The vagaries of the marketplace have likewise reinforced this uniquely American orientation. In our capitalistic society, land is a fundamental economic good. Land is wealth. Since individual status and position are largely a reflection of economic power, much of individual self-meaning and notions of self-worth are directly correlated to the size of the individual's asset base. Real property often accounts for a substantial portion of personal wealth. Thus, attacks on this base are attacks on the individual. Economic stability similarly reinforces a sense of personal stability as well as a feeling of well-being and security. Any devaluation as a result of another's needs or concerns is viewed as having direct fiscal consequences on the economic viability of the owner. The loss of particular uses is equivalent to the loss of value. Regulation can therefore directly interfere with an individual's perceived economic security and corresponding notions of well-being. Economic consequences produce psychological reactions. In America, decreasing land values often coincide with a sense of personal devaluation and loss of self-esteem.

Against this backdrop, takings law has developed. It is not surprising then that this singular vision of the inviolability of real property rights has been translated into a legal culture that emphasizes individual ownership interests and private individual expectations. Notions of justice and fairness similarly follow this cultural orientation, creating expectations of compensation when the government interferes with these perceived rights. These presumptions substantially narrow the debate over takings jurisprudence. If one begins by heralding the sanctity and inviolability of ownership rights, it becomes logical to perceive governmental restrictions on these sacred rights as wrong and punitive.

A. The Biology of Property

The American notion of property is molded by and deeply rooted in our species' biological predispositions. These predispositions help explain the close psychological connection we have with our real property and the prejudice we display in takings cases. Humans are predisposed to certain behaviors.40 Millions of years of evolutionary change have shaped our species' natural behavioral tenden-

40 See generally, JOHN ALCOCK, ANIMAL BEHAVIOR: AN EVOLUTIONARY APPROACH (5th ed. 1993); DAVID BARASH, SOCIOBIOLOGY AND BEHAVIOR (1977); and MARGARET GRUTER, LAW AND THE MIND (1991). While human behavior is full of fascinating mysteries, there is little scientific doubt that the human species is predisposed to act in a variety of "programmed" ways. Human sexual behavior, mate choice, and parental care are clear examples. No longer is the question whether human behavior is genetically determined, but rather to what extent. The evolution of the human capacity to make rules and laws is itself now thought to be part of our biology.
cies in very definite ways. The Darwinian forces of reproductive success have molded a species adaptive to, and exploitive of, its environment. We do not come into this world with a tabula rasa; our evolutionary history is deeply implanted into every fabric of our biology. It is no coincidence then that incest taboos and nepotistic behavior permeate human history. Biologists are not surprised to find universal tendencies toward short-term goal acquisition and avoidance of indiscriminate altruism.

Our evolutionary origins have likewise molded our notion of property. Like our primate relatives, humans are strikingly territorial. An elementary course in historical geography clearly illustrates this feature. Without the ability of flight or the burrowing capacities of other animals, human territorial impulses mainly occupy the horizontal plane. Humans orient themselves spatially in the world, occ
cupying and defending surface territories. Until very recently, threats and attacks originated along the horizontal plane and humans naturally measured their "place" by depth and width calculations. The space which had real effect was the horizontally-oriented ground upon which crops grew, game was hunted, and others trespassed. The ground that supported human feet reflected the physical dimension of importance. Any territorial imperative generally minimized vertical significance, emphasizing the outward-directedness of terra firma. Indeed, such internal templates guide and control a wealth of human experiences.243

Humans are also predisposed to link possessory claims to spatial proximity—the closer an object is physically to a person, the more likely that person is to claim ownership of the object as well as to be perceived as the owner of the object. Margaret Gruter has postulated that the visual stimuli of seeing an individual and an object together might create a gestalt that triggers brain chemicals.247 These chemicals lead to characteristic behaviors such as submission to "ownership" rights and moralistic aggression when "possession" is violated.250 Respect for possession results when we perceive physical closeness between two individuals or between an individual and an object.251 Physical proximity creates a gestalt which causes feelings of "rightness" or "balance" in the viewer.252 Interference with this gestalt engenders feelings of violation and rage.253 This sense of "me" and my immediate environment forming a unity is reinforced by feelings of well-being. Indeed, Gruter has suggested that the visual

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EVOLUTIONARY DEVELOPMENT OF MORALITY AS AN EFFECT OF DOMINANCE BEHAVIOR AND CONFLICT INTERFERENCE (Primus 1992).

240 A baby will stick out its tongue when another human extends her tongue. This is not learned behavior but merely one instance of our biological prewiring. For a general but fascinating discussion of our internal templates, see NIGEL CALDER, THE HUMAN CONSPIRACY (1976).

241 See Gruter, supra note 241, at 43.

242 See id. See also FRANS DEWAAL, PEACEMAKING AMONG PRIMATES (1989).

243 See id. See also MARGARET GRUTER, BIOLOGICALLY BASED BEHAVIORAL RESEARCH AND THE FACTS OF LAW (Primus 1992). Gruter posits that respect for the possessor and his/her possession may have developed as a behavioral trait over a period of hundreds of thousands of years. She allows that the concept of possession may have in part developed from the other-child relation, where the nursing mother is perceived as having the "right" to actually hold and possess her infant.

244 See ROBERT FRANK, Emotion and the Costs of Altruism: The Economic Foundations of the Sense of Justice, in THE SENSE OF JUSTICE, 47-66 (Masters and Gruter, eds., 1992). Our emotions can be viewed as "commitment devices" which allow an individual to signal responses that entail long-term benefits despite short-term costs. Therefore, even when it is not rational to retaliate in certain circumstances, we are advantaged by others thinking we will retaliate (i.e., that we are emotional, rather than purely rational). Emotional behavior is evolutionarily advantageous.
stimuli of perceiving oneself as linked with the horizontal plane may trigger endorphin production, reinforcing a particularly personal relation to land.

This biology of possession, based upon physical proximity, seems so strong that education has little effect on modifying the behavior. When children in Israeli kibbutzim were taught that toys are to be shared, they readily understood that others’ toys were available for their amusement, but steadfastly refused to allow other children to play with their own toys. Although children could accept the principle that things should belong to everyone and would even demand that their friends’ toys be freely shared, they themselves proved very reticent to part with their own things. As Eibl-Eibesfeldt summarized, the children “tended to be grabby.”

There seems to be a different psychological orientation when we view our relations to our own possessions than when we view another’s relations to her possessions. The norm of personal possession seems biologically based; we simply cannot educate “possession” or “possessiveness” out of our species. The physical plane for possessiveness is horizontal in scope.

Such biological predispositions in how we view and relate to land are further bolstered by the socio-economic culture of the United States. Biologically, ownership of real property engenders a defined band of emotional attachments. Humans are conditioned to ground themselves in their horizontal environment and to claim nearby space with a characteristic absoluteness. Strong feelings surround this sense of ownership and any attack on its inviolability produces immediate outrage and defensive strategies. The idea that one’s property is one’s individual domain “feels” correct. Ownership carries with it the sensations of stability, security, and well-being.

The particular American cultural orientation toward property as a thing to be exploited and developed reinforces this evolutionary bias. Our history of “taming” the wilderness reveals strong biases toward the sanctity of land ownership and paramount control over possessions. Our relation to land has not been based upon a recog-

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254 See Gruter, supra note 252, at 222 (stating that “[t]he visual stimuli of perceiving individuals together, or an individual and an object (container, tool, weapon or prey) as a gestalt, may trigger endorphin production.”)
256 See id. In the kibbutz, children became attached to objects in a possessive way. Kibbutz children have fixed sitting places and own and defend their toys. When adults attempted to reverse the birthday ritual and have the birthday child give presents rather than receive gifts, the experiment was a failure.
257 Id.
258 See generally Neal Milner, Ownership Rights and the Rites of Ownership, 18 L. & SOC. INQUIRY 227 (1993) (discussing how a sense of entitlement in ownership rights can be found in landowner narratives).
nition of the resource's intrinsic value; rather, its economic importance to the individual takes center stage. Exploitation, rather than conservation, has been the predominant ethos. Physical control over my immediate environment dominates. Psychologically, the individual's relation to land is defined by notions of control, power, and self-identity.259

The historical myth of the American conquest of the West likewise reinforces, and is reinforced by, this psychological orientation. Americans "opened the West" to progress260 and "brought civilization to the unenlightened."261 Culturally such themes reinforce our basic biology and underscore an individual braggadocio toward ownership rights. Private property rights provided the foundation of the American miracle. We as a society are defined by this history. Also, much of our self-pride and national enthusiasm emanate from this land relation. Individual farmers and ranchers, battling encroaching "outsiders" and threatening elements, are American icons. We can readily relate to a television show such as "Bonanza", where the Ponderosa262 was the central figure tying the characters and the stories together. Land is integrally part of the American persona, its magical power instilled into our conceptions of ourselves. How we relate and approach property-rights issues are directly influenced by this social patterning. The land is my home and any invasion or restriction of it by someone else expressly threatens me. The "my-ness" of my land attains heightened status. More than just a "thing," land becomes an integral part of the human. Private land ownership therefore also grounds this idiosyncratic American personality.

Initially influenced by biological predispositions to cling to surrounding property263 and taught by American culture to perceive land ownership as a sacred right, Americans begin the takings debate

259 See id. at 236-37 (arguing that landowners value interdependence and community, condominium owners value self-preservation, and all see land as part of their identity); Cf. J.G. Manning, Demotic Egyptian Instruments of Transfer as Evidence for Private Ownership of Real Property, 71 CHI.-KENT L REV. 237 (1995) (discussing that very clearly defined concepts of private ownership existed in ancient Egypt).

260 See Donald W. Large, This Land is Whose Land? Changing Concepts of Land as Property, 1973 WIS. L. REV. 1039, 1044 (1973). Using words such as "open," "progress," and "development" to signify conversion of the natural terrain to agricultural or commercial lands carry with them the implication that the change is good. Americans displayed a "cowboy mentality" that viewed land as a replaceable commodity that could be controlled for profit.

261 See generally FRANcIS PAUL PRUcHA, THE GREAT FATHER (1984) (discussing the history of the American government and the American Indians); WILLIAM CRONON, CHANGES IN THE LAND: INDIANS, COLONISTS, AND THE ECOLOGY OF NEW ENGLND (1983); LARGE, supra, note 260. Native Americans were commonly referred to as savages, pagans, aborigines, and uncivilized. It was the white Europeans' "burden" to take this wild country and bring order and prosperity. This particularly Judeo-Christian world-view is clearly reflected in Johnson v. M'Intosh, 21 U.S. (8 Wheat.) 543 (1823).

262 Significantly, we humanize this land mass by giving it a name.

263 See supra notes 249-257 and accompanying text.
with an overwhelming prejudice in favor of the rights of private property owners. Because the focus of this orientation is predominately horizontal, certain "transgressions" are allowed. We recognize the need for governmental regulation in many areas of our life and we even admit to some degree of regulation of our land. Certain governmental regulation actually enhances property value and consequently is encouraged. 264 Thus, many zoning regulations become readily acceptable since their impact is perceived as property-supporting rather than property-threatening. 265 Regulation that leads to enhanced value is universally accepted as a "proper" function of government, even by the most avid of the property-rightists. Such an increase in the fair market value of property supports our conception of the nature and function of property, reaffirming the individual's biological and cultural expectations.

However, where the government seeks to deny completely the perceived and deeply felt relation between an individual and his property, dysfunction results. The psychological nexus is ripped apart and schizophrenic reactions become an expected, natural consequence. The intense passion associated with takings issues reflects the underlying discord that arises when our conception of the relationship between people and property is fundamentally altered by a judicial or legislative act. While our species has a great plasticity, we only bend so far. The Holmes threshold (stating that regulation that, "goes too far . . . will be recognized as a taking") may in effect be an indicator of the outer limits of this basic property gestalt. Feelings of unfairness and injustice arise when basic notions are challenged or rejected to too great of an extent. If we are biologically pre-wired to conceive of land in a certain defined way, such predispositions will necessarily influence our takings calculus. However much we might rationally understand the need to make adjustments to a wide range of social necessities, we often are captives of our evolutionary and cultural pasts.

264 See supra note 79 and accompanying text.
265 This of course was the primary focus of Euclid. Zoning is characteristically defended as a system of reciprocal benefits and burdens that enhances the community as a whole. Alfred Bettman, the era's leading advocate and defender of zoning, noted its advantage as follows: "[F]or in exchange of the restrictions which it places on each piece of property, it places restrictions for each piece of property, that is for the benefit of each piece of property, and protects each piece of property, as well as gives to each piece of property its share of the general health, order, convenience, and security which the whole plan brings to the community." Brief amicus curiae for the National Conference on City Planning, The National Housing Association and the Massachusetts Federation of Town Planning Boards at 37, Euclid v. Ambler Realty, 272 U.S. 365 (1926).
266 Supra note 56 and accompanying text.
B. Shaping the Denominator

As the first part of this article has detailed, a significant event for takings jurisprudence is the determination of the relevant parcel against which to apply diminution analysis. Because any takings formula must begin with a definition of the unit of property to be examined, it is important to understand how we may be unconsciously biased in our evaluation about, and calculation of, the appropriate unit. Evolution has fostered a deep reverence in our species for land and possession. Humans tend to "cling" to their immediate surroundings, evidencing a territorial imperative common to many other species. We therefore begin any inquiry with considerable psychological baggage. At gut level, land is not common property, equally available to all. Nor do we begin with a feeling that community value has significantly contributed to the land’s inherent worth. Once I attach land as “mine,” my perspective is in many ways predetermined by my biology: external interference with my dominion and control is perceived as hostile and villainous. External limitations on my free use and development are comprehended as corrupt and unfair. The individual intuitively takes the initial land bundle as an aggregate, predisposed to perceive the acquisition as a unified whole. Such feelings apply to horizontal dimensions of the initial land mass acquired, reflecting the predominance of our sense of sight in orienting ourselves in the world. In short, it seems natural to consider the surface dimension of the acquired whole as the relevant parcel.

Culture too, instills and reinforces this horizontal bias. The rugged individualism of western mythology and our capitalist-based economy encourage us to regard land ownership as absolute. Individuals perceive themselves as not merely holding a loose “bundle of sticks,” but as wielding a solid staff of biblical proportions. Land is

\footnote{See supra notes 29-54 and accompanying text.}

\footnote{See generally ROBERT ARDREY, THE TERRITORIAL IMPERATIVE (1966). Humans are markedly territorial as are many animal species. Such territoriality functions to forward feeding efficiency and survival, thereby increasing reproductive success. See also JOHN ALCOCK, ANIMAL BEHAVIOR 279-319 (1993) (discussing territoriality in the ecology of finding a place to live and finding food to eat); GEORGE C. WILLIAMS, ADAPTATION AND NATURAL SELECTION, 240-243 (1996) (discussing the territoriality of animals).

\footnote{Such theories provide interesting diversions for legal theorists. They reflect who we might become, but certainly not who we are.}

\footnote{Property is often analogized to a bundle of sticks: a grouping of rights and obligations that can vary in size and scope. Some sticks may be removed from the bundle without engendering a takings; others, such as the "right to exclude," are considered essential to the notion of private property. See generally LAWRENCE BECKER, PROPERTY RIGHTS: PHILOSOPHIC FOUNDATIONS 11-21 (1977) (discussing various theories of property rights); JOHN CHRISTIANA, THE MYTH OF PROPERTY: TOWARD AN Egalitarian Theory of Ownership 3-27 (1994) (discussing the meaning of ownership); J.E. PENNER, The "Bundle of Rights" Picture of Property, 43 UCLA L. REV. 711 (1996) (describing the bundle of rights picture as powerfully amorphous, presenting a vision of}
meant to accommodate the human realm. Complete dominion and control over one's property ensures high dominion and control over one's self. Much of an individual's wealth is a reflection of the individual's property worth; security, status, individual fulfillment, and reproductive success are often inherently related to land acquisition and control. Individual self-esteem is a product of land valuation. Any curb on free development and exploitation of these ownership rights weakens the resource by weakening the attractiveness to the market.

Culture thus further conditions us to regard property selfishly and to perceive it with a sense of inviolability and sacredness. This absoluteness maintains a largely horizontal bias since this is the major plane of economic development. Generally, it is what one can grow, build, or use on the surface that dictates the parcel's value. Such horizontal economies transform themselves into horizontal psychological orientations. We understand our surface development rights as our absolute property realm. Culturally, this "kingdom-gestalt" seems right; it "feels" just.

To the extent that we are predisposed by our biology and culture to view property with a particularly horizontal bias, the "diminution in value" standard becomes more clearly defined. The mechanics associated with the vertical calculus can be dispensed with, regardless of Rehnquistian jurisprudential webs arguing for vertical valuation. Our sympathies are simply not vested in this realm. As long as surface viability is maintained, huge restrictions on other parts of the vertical cylinder become acceptable. The ease with which Penn Central has been received offers some evidence of this psychological orientation. Given the extraordinary value associated with New York air rights and the somewhat extenuated notion of landmark preservation as a significant piece of the common good, one could expect significant outcry. However, as long as the economic viability of Grand Central was continued, the economies of air space claimed a much lesser role. Sympathy for other types of use diminution is only intermittently aroused when the landowner's surface use continues
to be viable and productive. Because our basic psychology is not negated, the Court's ruling gains authority.

While many might decide the case differently, most can emotionally and rationally accept the Court's majority decision. We are not outraged; we are merely "on the other side". This dialectic has provided the foundation for a number of significant cases within the past decade, most notably the Court's decision in *Keystone Bituminous Coal*.

Even notions of "investment-backed expectations" seem inexplicably tied to horizontal, rather than vertical, space. Simply put, as long as some "normal" surface use is allowed, human empathy is slow to arouse. Although our reason may direct us toward embracing the basis of conceptual severance, we appear unable to freely acknowledge the "equality" of air and subsurface property. Continued viability of the horizontal plane allows great interference with the vertical dimension.

Conversely, when the surface use is significantly disrupted, empathy pours in. From a species and cultural standpoint, an inability to use the surface is unacceptable, tantamount to denying the inherent symbiosis that exists between individuals and their land. Where governmental ordinances limit the free use of a private owner's horizontal space, there is an immediate "gut" reaction. Our biological prewiring evokes feelings of outrage. We react with moral aggression, in part as a response to species-programmed expectations. Given this reaction, it is of little surprise that the most vehemently pursued takings cases involve drastic limitations of the surface property use. Wetlands regulation is perhaps the most aggressively scrutinized body of land use restrictions in the past few decades.

Considering the enormous and scientifically unquestioned value that wetlands present, one might wonder why the debate has been so acrimonious.

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275 See Penn Central, 438 U.S. at 127 ("[St]atute[s] that substantially further important public policies may so frustrate distinct investment-backed expectations as to amount to a 'taking'.").

276 See Gregory S. Alexander, *Ten Years of Takings*, 46 J. LEGAL EDUC. 586, at 592 (1996) (pointing out that at least three members of the current court can be counted as firm conceptual-severance supporters, with Justice O'Connor having used the concept in *Irving* and perhaps predisposed to use it again under the right circumstances, leaving the Court just one short of a conceptual-severance majority).


ous. But wetlands are all about surface use and as such, the outcry reflects a low tolerance for surface use interference. Public scrutiny of these regulations often dismisses the considered jurisprudence underlying the restrictions. This is not a rational debate where the better of two sides will triumph; weighed policy arguments are not necessarily the most convincing.

Similarly, in other forms of environmental regulation where one might expect greater consideration for the societal effects of private development and therefore less enthusiasm for rancorous takings claims, one finds some of the most emotionally-driven suits. Significant prohibition of surface development plainly cannot be rationalized away. Even with a population of individuals reared on images of Bambi and Smoky the Bear, the Endangered Species Act has astonishingly little public support.

There remains something sacrosanct about the horizontal plane; there remains a deep cultural bias toward land use and economic development.

Lucas presents a case in point. Prohibited from developing a home on his beachfront lot, Lucas attacked the state’s legislation aimed at protecting property and preventing the accelerated erosion of the beach/dune system. Faced with such significant competing interests, one might expect a fairly divided populace. The outcry, however, was essentially one-sided. Lucas was branded a modern-day hero by Justice Scalia’s majority opinion; the government was vilified. By ruling that regulations which deprive a landowner of all economi-

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See Michael Doyle, Bill Targets Losses From Regulation, SACRAMENTO BEE, March 4, 1995, at A1 (discussing California bill that would compensate landowners who lose value due to government regulation); Randall Edwards, Vanishing Wetlands, COLUMBUS DISPATCH, Oct. 13, 1997, at 4C (discussing how Ohio has lost 90% of its wetlands); Lynne K. Varner, Wetlands’ Label Swamps a New Farmer’s Dream—Foreclosure Looms for Farm, SEATTLE TIMES, May 7, 1997, at A1 (discussing the case of one farmer as a means to look at the question of whether “a few: should bear the cost of environmental policies that benefit the many).


See Beachfront Management Act, S.C. Code Ann. § 48-39-250(1)(a) (Supp. 1990) (stating it was in the state’s best interest “to protect and promote increased public access to South Carolina’s beaches for out-of-state tourism”); see also Lucas, 505 U.S. at 1039 (Blackmun, J. dissenting).
cally viable use of land are takings per se, the Court adopted a very limited and narrow categorical rule. However, the Court gained broad praise for its “sweeping decision” and was widely heralded for its defense of individual rights. In reality, Lucas accomplished little of any jurisprudential value. The Court rested its decision on the very questionable trial court finding that the Lucas’ lot had been rendered valueless by the state’s enforcement of its coastal-zone construction ban. Allegations are sometimes as effective as fact, and the picture of Lucas’ family prevented from building its dream home produced powerful biological responses. The connection between surface territory and notions of shelter, nurture, and safety are powerful archetypes in the human consciousness. Environmental and social realities pale in comparison to the genetic behavioral propensities associated with land. When focused on the horizontal dimension, our sensitivities are magnified and it becomes extremely difficult to resist Lucas’ pleas. Our culturally-biased perception lead us to believe that Lucas-dicted circumstance threaten both the individual’s proper relation to property as well as the established notion of property as market value. The uselessness of the land’s surface evokes strong feelings. We are pre-wired towards categorizing Lucas’ situation as a paradigm of injustice and unfairness. Policy arguments supporting governmental intervention pale in comparison.

Lucas, 505 U.S. at 1027. (stating that although property owners expect that the uses of land will be restricted from time to time by the State through legitimate exercise of police power, it can avoid compensation when the State deprives land of all economically beneficial use only where “the proscribed use interests were not part of his title to begin with,” such as when the intended use constitutes a public nuisance).

Geoffrey A. Cambell, High Court: Owners to be Paid When State Laws Affect Property, BOND BUYER, June 30, 1992, at 6 (“[Lucas is] one bright jewel that advances property rights principles”); H. Jane Lehan, This Land is my Land; Property Rights Movement Fits Landowners, Ecologists, L.A. TIMES, October 4, 1992, at K1 (“Lucas became one of the first folk heroes of the young but growing private property rights movement”); Sylvia Lewis, Lucas Ruling: Shifting Sands, South Carolina Coastal Council, PLANNING, Aug. 1992 at 30 (“Experts say the implications of Lucas could be momentous, especially for wetlands regulations and open space preservation”); Jonathan Marshall, Big Victory for Property Owners: States May Have to Pay If They Ban Development, S.F. CHRONICLE, June 30, 1992, at A1 (“[Lucas is] a significant victory for property owners”; Victory!—Lucas Wins High Court Property Rights Ruling, BUSINESS WIRE, June 29, 1992 (“This landmark ruling sends a clear message to government regulators”); You Take, You Pay, COMMERCIAL APPEAL, July 4, 1992, at A12 (“The Supreme Court has taken a large step toward banning what had become the legalized theft of private property”).


See Lucas, 505 U.S. at 1044 (Blackmun, J., dissenting) (describing remaining value to ownership of land).

See id. at 1009. The Court noted that the lower court’s finding that the lot had been rendered valueless was the premise of the Petition for Certiorari. Because this finding was not challenged in the Brief in Opposition, the Court declined to entertain the argument in the respondent’s brief on the merits. Cf. id. at 1044 n.5 (Blackmun, J., dissenting) (arguing that the issue was not disposed of on remand).
Such biological and cultural analysis explains the extraordinary resilience of the property-rightist position. Notwithstanding decades of legal decisions to the contrary, they steadfastly refuse to release any of the "my-ness" of their horizontal domain. Essentially, human biology interferes with, and acts as a subterfuge to, rational examination of the issue. There are few legal questions with which the legal system has wrestled for so long, and few issues where the lay individual seems so at odds with the controlling legal precedent. Recognition of our species' patterning can free us to address the issue more directly and with less subconscious cultural baggage. Understanding who we truly are is the first step toward enlightenment.

C. Formulating a Calculus

The problem of defining the relevant unit of property for takings purposes is essentially a problem of perception. Our notions of fairness and justice in this area are so wedded to our culture's narrow view of an individual's relation to land that reasoned discourse is often displaced by a form of ideological fervor. Although counseled jurisprudence has engineered some deviation in the vertical realm, our emotional attachment to the horizontal dimension remains firm. Biology and culture provide windows through which we can understand the passionate devotion of Americans to the notion of "horizontal privilege." We clearly are property-rightists at heart. But while biological predispositions and cultural orientations help form and direct the law, they do not necessitate the current legal indecision in the area. Indeed, it is a particularly human characteristic to be able to go beyond our inherent prejudices and learned behaviors and to construct laws that more positively advance the human situation. If we can all benefit from instituting a particular legal matrix, it behooves us to do so even at the expense of certain ingrained behaviors. Understanding why we are the way we are provides insight into our behaviors that can help liberate us from many of the bonds of our culture and thereby allow us to more freely evaluate the issues

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288 See supra notes 78-102 and accompanying text.
289 This is not to argue that we should recklessly discard all cultural or biological predispositions. However, while acknowledging that they have served our needs well to date, we should view these predispositions critically in evaluating their value for the future. While the common outcome of natural selection is the promotion of the long-term survival of the organism, sometimes fitness maximization leads to increased specialization, causing reduced numbers, restricted range, or increased vulnerability to environmental changes. See generally, ROBERT TRIVERS, SOCIAL EVOLUTION (1985); JOHNATHAN WEINER, THE BEAK OF THE FINCH: A STORY OF EVOLUTION IN OUR TIME (1994); WILLIAMS, ADAPTATION AND NATURAL SELECTION 17-19, 27-28, 211-212(1966). We should be aware also that long-term fitness maximization may come in conflict with our current ideals regarding land use.
before us. This is certainly true with respect to establishing a takings calculus and defining the unit of relevant parcel.\textsuperscript{290}

From a purely policy-based analysis, resolution of this issue of parcel definition seems fairly straightforward: identify the relevant parcel as the entirety of the originally purchased tract. This simple orientation provides a workable definition that maximizes clarity, simplicity, and economic efficiency.\textsuperscript{291} Takings calculus would be narrowed to considering only a single moment of time, the date of purchase. In most instances, the parameters of the original deed would provide a bright definition of the factual setting uncluttered by notions of historical expectation or multi-use planning. Since the parcel is defined at the moment of acquisition, the owner can factor in a possible "takings quotient."\textsuperscript{292} Laden with the understanding that the parameters of the acquisition will dictate the parameters of the horizontal calculus, investors are enabled to make real-life business decisions against their gauge of the boundaries of potential regulatory activity at their site. Such predictability leads to low administrative costs as well as increased certainty in, and efficiency of, management.

When diminution analysis is performed against the original tract, we are also able to maintain a baseline legitimacy to our takings calculus. Even though our senses of fairness and justice are firmly wedded to our biological and cultural predispositions which call for preserving the economic and physical sovereignty of the horizontal dimension, we tend to consider an original purchase as a single event, unified in time and space. Reciprocity considerations, a basic prerequisite to legitimacy, are more easily weighed within a fixed gestalt of limited variables.\textsuperscript{293} Land acquisitions bring defined contexts whose logical boundaries provide concrete instances of reciprocal altruism. The value of Grand Central Terminal is in part a reflection of the decades of governmental regulation and subsidies in the surrounding areas.\textsuperscript{294}

The monetary significance of Lucas' two parcels

\textsuperscript{290} This essay does not attempt to provide a detailed analysis of the proper takings denominator. Its focus is to explain the idiosyncratic American perspective in terms of biological and cultural factors. A full analysis of the "original purchase" standard is left for another time.

\textsuperscript{291} See supra at notes 149-162 and accompanying text.

\textsuperscript{292} While they rarely can be certain, investors make educated calculations about the probabilities and the extent of regulation. Most investors recognize existing areas of concern (such as wetland potential) and know of, or can easily discover, pending legislation.

\textsuperscript{293} Indeed, such a restrictive definition is necessary given the wide array of factors contributing to the property's economic value. Fiscal viability is often the result of opportunities for exploitation created by society itself. The community provides the social, historical, and cultural significance upon which much of the fair market value derives. See Coletta, supra note 124, at 360-364.

\textsuperscript{294} See Penn Central Trans. Co. v. City of New York, 365 N.E.2d 1271, 1275 (1977). Here the court noted:
evidences the success of coastal management and the importance of usage separations gained from public zoning. Such governmental largess is given more recognition when silhouetted against the original purchase. Indeed, the legitimacy of the state’s regulatory authority is largely based upon the reciprocal advantages that accrue to individual owners on their individual parcels. While most government limitation is received with skepticism and disapproval, recognition of some tit-for-tat lends more than a smidgen of validity to this “new math.”

By categorizing the relevant parcel as the originally purchased tract, most jurisprudential concerns with conceptual (or actual) severance disappear. Owners will be unable to enlist the selective math of Loveladies and Florida Rock to argue an economic wipeout if in fact surrounded by a history of economic windfall. Therefore, if the landowner subsequently subdivides the parcel, the original whole will still provide the denominator of the takings calculation. Conceptual severance issues such as split zoning and multiple factor analysis likewise are muffled. The manufactured jurisprudential concerns of multiple use designations and the unworkability of multiple elements are summarily dismissed by the simplicity of the calculation. Perhaps the major challenge to this definition would be the type of manufactured severance that has been so hotly pursued in the vertical domain. Developers could engineer acquisition plans whereby they would purchase entire communities on a single-lot basis. By limiting the calculus to each lot’s defined purchase area, such developers would magnify the scope and effect of any regulation and thereby maximize the potential for takings compensation. However, this possibility could be minimized by a simple rule regarding the integration of contiguous lots when purchased as part of an underlying scheme, in much the same way that reciprocal servitudes are established. In any event, the sheer administrative nightmare of deal-

Of course it may be argued that had Grand Central Terminal never been built, this area would not have developed as it has. Thus, the argument runs, construction of the terminal triggered growth of the area, and created much of the terminal property’s current value. In reality, it is of little moment which comes first, the terminal or the travelers. For it is the interaction of economic influences in the greatest megalopolis of the western hemisphere—the terminal initially drawing people to the area, and the society developing the area with shops, hotels, office buildings, and unmatched civil services—that has made the property so valuable. Of primary significance, however, is that society as an organized entity, especially through its government, rather than as a mere conglom-erate of individuals, has created much of the value of the terminal property.

25 See generally Robert Axelrod and William D. Hamilton, The Evolution of Cooperation, 211 SCIENCE 1390-1396 (1981) (showing that tit-for-tat is an evolutionarily stable strategy, as once the genes for cooperation exist, natural selection will promote strategies that base cooperative behavior on environmental cues.)
26 See supra note 179.
27 See supra notes 70-77 and accompanying text.
ing with each parcel separately would likely discourage developers from practicing in this manner.

The striking advantage of limiting the denominator to the originally purchased tract should not be lost by our emotional attachment to a certain, very American conception of property. If it is true that humans are yielding toward the vertical axis but passionately defensive of the horizontal domain, we should expect much more dissonance when deciding regulatory takings questions along the "metes and bounds" dimension rather than along the "height and depth" realm. This has been the undeniable pattern for the past seven decades. Even though most courts seem committed to defining the takings denominator as the originally purchased tract, we are not. Our "human-ness," our "Americanism," keeps distancing us from consistent, rational analysis. This is not to say that there are no sound positions to the contrary. Neither Rehnquist nor Scalia need be labeled as emotive Neanderthals. But the attractiveness of their argument for most individuals depends less on its analytical power than on its "gut" force. We are "programmed" to resist mightily any restriction within our horizontal realm.

V. CONCLUSION

The economics of diminution demand a clear measuring stick. Without a workable and consistent definition of "relevant parcel," the diminution calculus becomes merely a tool for enterprising judges to manipulate decisions toward their own jurisprudential leanings. Courts have failed to clearly delineate, or even reach general consensus about, the unit of property against which economic impact is to be measured for regulatory takings purposes. Seven decades of discourse have produced a wealth of cases that provides little more than individualized position papers on a myriad of possible alternatives. Lack of direction by, and misdirection within, the Supreme Court has compounded the problem by creating a climate of confusion and a general lack of accountability.

Given the immediate and relatively transparent advantage of limiting the takings denominator to the physical dimensions of the original purchase, this century-old debate assumes the character of a true Greek tragedy. The inability of legal analysis and counseled jurisprudence to resolve these issues evidences the resilience of our biology and the strong influence of our culture. However powerful these forces may be, they need not confine us to Sisyphean exertions of futility. Our basic biological predispositions evolved to maximize our inclusive fitness. Culture likewise functions to advance the human interest. To the extent each fails to serve us well in our modern setting, we should not hesitate to move forward. Recognition of dysfunctional ties is the starting point for "breaking the chains."
American orientation toward property, an orientation which may have served us well at one time, is in great need of realignment. Environmental concerns and resource scarcity can ill-afford a jurisprudence that is better suited to a world of resource abundance and individual monopoly.

Biology and culture predispose us to view land as personal and sacrosanct. Outside meddling by the government engenders immediate negative responses and instills feelings of injustice. We cannot, however, and should not, allow these basic predispositions to blind us to reasoned resolution of the issue. The issue of regulatory takings demands the best of judgment and reason. Certainly, determination of this issue should depend less on the way we are constructed and more on the underlying advantages of the competing positions.