

# Alertness, local knowledge, and Johnny Appleseed

David Skarbek

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**Abstract** Anderson and Hill argue that property rights entrepreneurs, driven by non-replicable Kirznerian alertness, identify unowned and unpriced attributes of a resource and capture rents to those resources by limiting access to them. I argue that alertness is non-replicable, but it is also not random. Kirzner’s analytical framework emphasizes an individual’s local knowledge and subjective interpretative schema. Incorporating these concepts and emphasizing two types of local knowledge, about social and commercial conditions, explains why some people are alert to profit opportunities and others are not. This implies that economic restrictions are more detrimental to entrepreneurship than previously understood. I provide evidence by examining Johnny Appleseed’s successful nursery business.

**Keywords** Property rights entrepreneurship · Alertness · Local knowledge · Interpretive schema

**JEL Classification** D23 · L26 · B25

## 1 Introduction

Children’s books and Disney movies depict Johnny Appleseed as a lovable oddball who wore a potato sack for a shirt and a cooking pot for a hat, as he traveled the frontier planting appletrees for the good of settlers and to encourage the spread of democracy. A Massachusetts Fruit Growers Association monument captures the essence of countless memorials to Appleseed: “He planted seeds that others might enjoy fruit” (Price 1967: 9). These traditional representations, found in many myths and folk stories, have distorted the true history of a successful entrepreneur into a myth about a simple botanical benefactor. The reality was quite different.

John Chapman (Johnny Appleseed’s real name) had a successful nursery business beyond the frontier in Pennsylvania, Ohio, and Indiana from 1797 to 1838. He planted orchards and sold the young trees to newly arriving settlers. Chapman would clear a patch of land “where he thought at a future day appletrees would be wanted;

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D. Skarbek (✉)  
Department of Economics, George Mason University,  
4400 University Drive, MSN 3G4, Fairfax, VA 22030-4444, USA  
e-mail: dskarbek@gmu.edu

then, in the fall, repair to Allegheny county, Pennsylvania, and wash out of the pomace at cider mills a bushel or two of seeds, and return with them on his shoulder, plant them at the proper time, enclose the spot with a brush fence, and pay some attention to the cultivation” (Price 1967, p. 36).

This basic endeavor—collect seeds at a mill, transport them beyond the frontier, and plant orchards to sell to future settlers—made Chapman a relatively wealthy man. In his lifetime, “...he had owned either by deed outright or on long-time lease no less than twenty-two properties totaling nearly twelve hundred acres. These holdings never represented great wealth, but they were considerably better than those of the average settler in the Middle West” (Price 1967, p. 224).<sup>1</sup>

Chapman’s fortune grew by selling apple trees to settlers, but his trees also performed an important function. Depending on the location, apple trees were a formal or informal requirement for obtaining property rights to a piece of land. Selling apple trees to settlers was equivalent to selling them a stronger and better-defined property right.

Anderson and Hill (2002) argue that the creation of property rights is a two-step process. First, alert entrepreneurs identify unowned and unpriced attributes of a resource. Second, entrepreneurs contract to limit access to those newly identified resources.<sup>2</sup> Citing Kirzner, they note that allocation decisions “are not arrived at merely by mechanical computation of the solution to the maximization problem implicit in the configuration of the given ends and means,” rather, entrepreneurship requires “*the very perception of the ends-mean framework* within which allocation and economizing is to take place” (Kirzner 1973, p. 33). Entrepreneurs do not intentionally pursue perception of the ends–means framework, so alertness constitutes a non-replicable input. In this way, property rights entrepreneurs capture profits.

Anderson and Hill have fruitfully applied Kirznerian alertness to explain why profits remain for entrepreneurs. This paper applies Kirzner’s two fundamental insights—the role of local knowledge and subjectivist interpretative schema—to explain why any particular entrepreneur is alert to a profit opportunity. Alertness is nonreplicable but it is also not random.

The frontier in the Northwest Territory (now Ohio, Indiana, Illinois, Michigan, and Wisconsin) provides a fertile historical setting for understanding the importance of local knowledge and interpretive schema in the property rights entrepreneurial process<sup>3</sup>. The

<sup>1</sup> Despite volumes of folk stories, there is remarkable little scholarly research on the life of John Chapman. This paper draws primarily from the historical investigation by Robert Price (1967), which carefully distinguishes between documented fact and fiction.

<sup>2</sup> Anderson and Hill discuss two types of contracting. Specific contracting describes voluntary coalitions of individuals who limit access to a commons among well-identified participants. General contracting applies to “all comers, including those not party to a specific contract...[and] take[s] the form of collective rules that recognize and legitimize claims on assets by some individuals and exclude others from those claims” (2002, pp. 495–496).

<sup>3</sup> Property rights economists have written little on land expansion east of the Mississippi River in the early 1800’s. One potential reason given by Anderson and Hill is that in “the East, climate and topography were similar enough to England that it was possible to adapt English institutions.” (2002, p. 498). The Western frontier, on the other hand, required innovations in land institutions such as range rights and cattle associations to adapt to the different resource endowments [See Anderson and Hill (2004)]. Despite the similarity of the Eastern United States to English climate and topography, there were still many uncertainties about land acquisition. Social norms and agent types, for example, were very different on the United States frontier compared with England.

life of one particular entrepreneur, Johnny Appleseed, provides evidence on how local knowledge and subjectivism drives this alert process of discovery.

## 2 Alertness, local knowledge, and interpretive schema

Alertness is central to the entrepreneurial process of identifying unpriced resources and contracting to limit access to them. Profits, Anderson and Hill argue, are not dissipated through competition because alertness is nonreplicable and contracting limits access to the opportunity once it is perceived. Entrepreneurs who become alert to the ends–means framework itself are the ones who benefit. Anderson and Hill illustrate this with an example of a prospector who announces, “There is gold in them thar hills” and finds himself in a race to get it. Contracting limits access to the resource and solves the problem for the alert entrepreneur who originally identified the profit opportunity. This theory has yet to show why that person was alert to the gold in “them thar hills” in the first place.

A fundamental aspect of Kirzner’s analytical framework is the non-omniscience of market participants and the corresponding importance of local knowledge. In a “world of perfect knowledge...there is no need and, indeed, no possibility in the theory of such a world to introduce entrepreneurship...the assumption of perfect knowledge automatically eliminates all such elements” (Kirzner 1973, p. 38). This conclusion applies to imperfect information as well. Non-omniscience on the part of market participants is prerequisite to entrepreneurship, as the removal of this ignorance makes previously undiscovered profit opportunities available.

The existence of ignorance creates a role for alertness and it implies that people with local knowledge are the ones who will be alert to particular types of profit opportunities. For example, a New York merchant will not be alert to the same profit opportunities as a cowboy in Wyoming. The cowboy uses his local knowledge about the best methods of maintaining cattle, the marketplace for beef and hides, and the incentives faced by employers and employees at all stages of production to identify unpriced and unowned resources and construct contracts that limit dissipation of rents. This local knowledge can exist prior to becoming alert to the ends–means framework. Kirzner concludes, “this process does *not* consist of deliberate search, it consists of a systematic but wholly unplanned process of undeliberate discovery” (Kirzner 1979, p. 151).

Local knowledge is an understanding of social and commercial conditions unique to a particular time and place. Social conditions include people’s desires, informal norms and culture, religious beliefs, expectations, speculations, and guesses. Commercial conditions include supply and demand, resources, and technology in localized regions. An entrepreneur’s local knowledge (of these and other conditions) will determine what he is alert to, and this local knowledge is nonreplicable because ignorance characterizes market participants. As Kirzner argues “a very great volume of one’s awareness of one’s environment, and of one’s expectations concerning the future, is the result of learning experiences that *occurred entirely without having been planned*” (1979, p. 142). A person may obtain local knowledge though serendipity, spontaneous discovery, and luck.

The other fundamental concept in Kirzner’s analytical framework is the subjectivist nature of individuals’ interpretive schema. This perspective views human action as

“inextricably *embedded* in the complex of perceptions and images that make up the consciousness of the human agent at each moment” (Kirzner 1979, p. 152). Two people can observe the same information and still draw different conclusions about its economic significance. An individual’s interpretive schema determines how he translates information into knowledge and thus what he is likely to be alert to.

This suggests that each person has a unique capability to discover particular profit opportunities<sup>4</sup>, which makes economic restrictions especially harmful to entrepreneurial activity. If a law prevents an individual of a particular group from owning land, for example because he is of a particular nationality, the local knowledge and interpretive schema that is unique to that individual will not lead him to be alert to related profit opportunities. People are less alert when they cannot profit from it (Kirzner 1973, p. 222). Even if they do become alert to opportunities, they cannot take advantage of them. If alertness is equally likely for everyone then legal restrictions will simply lead to members of other groups identifying the profit opportunities. When alertness is not random, restrictions becomes more harmful. The view of alertness as randomly distributed underestimates the benefits of economic freedom in discovering profit opportunities (Klein 1997).

Kirzner’s theory of entrepreneurship makes the equilibrating tendency of the neoclassical model coherent. In this model, the entrepreneur is operating within a set of specified institutions. When applied, though, the empirical reality is different from the assumptions of the model—institutions in the real world are not static. This paper, following Anderson and Hill, takes the market landscape as consisting of some institutions that are very well-defined and others that are not. As a result, entrepreneurs can alter the incompletely specified institutions to increase the value of resources in much the same way that they can alter the bundle of resources in traditional goods markets<sup>5</sup>. In the case of Chapman’s nurseries, this entails selling apple trees to settlers as a means for strengthening property rights.

Chapman’s entrepreneurial endeavor included the use of resources for which money prices existed and calculation was possible, and he had a reasonable expectation of secure rights to the fruits of his labor. The entrepreneurial role came with the perception of the unpriced attributes not solely as goods but as having value in strengthening settlers’ property rights. Kirzner’s theory of entrepreneurship, strictly speaking, applies only to behavior within a well-specified, well-functioning market for goods and services; allowing for non-static institutions suggests a role for entrepreneurship over the marginal changes of institutions as well.

Once an individual becomes alert to institution-altering profit opportunities, what factors will give these entrepreneurial efforts permanency? The degree to which the entrepreneurial-generated change persists depends on how closely it aligns with the current institutions and the context in which the entrepreneur is acting. Newly altered

<sup>4</sup> Leeson et al. (2006) make a related argument about the heterogeneity of entrepreneurs. They argue that errors of overpessimism lead to slower market correction than errors of overoptimism, but because people differ in their overpessimism for particular opportunities, market correction still occurs.

<sup>5</sup> Beaulier and Prychitko (2006) discuss the tension amongst evolutionary and teleological theories of the emergence of property rights by Austrian economists. Anderson and Hill’s theory of property rights entrepreneurship is an evolutionary account because although the individuals are acting purposefully, there is no system level planner or hierarchy of ends; entrepreneurs engaged with varied and competing individual ends leads to the creation of property rights.

institutions will align more closely depending on how they arise (either endogenously or exogenously) and the knowledge used in implementing them (either foreign or indigenous knowledge) (Boettke et al. 2008). Institutions grounded in the community's culture, norms, and conventions are more likely to be permanent. In similar fashion, it is local knowledge and individual perception that affects who is alert to institution-altering profit opportunities in the first place.

### 3 A historical case study: John Chapman's apple nurseries

Chapman's alertness to entrepreneurial profits from apple trees resulted from his local knowledge of the frontier and his unique interpretive schema. With these, he was alert to profits from strengthening property rights on the frontier.

There were two formal ways for settlers in the Northwest Territory to obtain property rights to land. First, settlers could purchase land from the federal government in line with formal rules. Often, trees were a legal prerequisite to a claim, as in "Kentucky's 'Sapphire Country' where the planting of appleseeds or peach stones was a common guarantee to warrant the establishment of a title," and cultivating at least two acres of a warrant was required in Pennsylvania (Price 1967, pp. 40, 21). Chapman was selling something that "everybody in Ohio needed by law. A land grant in the Northwest Territory specifically required a settler to 'set out at least fifty apple or pear trees' as a condition of his deed" (Pollan 2001, p. 16).

Second, settlers could purchase land from private land developers, such as the Ohio Company or the Holland Land Company. "At Marietta," Price writes, "when the Ohio Company in 1792 set up the 'Donation Tract'...they stipulated specifically that to acquire a hundred acres a settler put out not less than fifty apple trees and twenty peach trees within three years" (Price 1967, p. 40). By requiring orchards for land acquisition, legal conditions in the Northwest Territory granted apple trees a valuable attribute. Chapman would plant orchards and then uproot and sell the saplings to settlers desirous of acquiring property rights. This sped settlers' ability to claim land through official venues, for they did not have to wait as long to establish an orchard.

#### 3.1 Local knowledge of social conditions

Chapman had knowledge about the social conditions of the time, including informal norms that had developed on the frontier. He understood these informal norms because he had lived on the frontier since he was a young man. Many settlers, for example, claimed land without any legal authority. One would simply "squat" on unoccupied land hoping to gain *de facto* rights of ownership, and conspicuous improvements (like orchards) signaled to other potential squatters that one had a stake in maintaining a particular piece of land.

In general, there was uncertainty about property rights on the frontier. Courts were absent in some parts of the frontier, and the government often did not understand the problems that settlers faced. Informal norms existed to accommodate the shortcomings or absence of formal rules. The interaction of settlers within the formal and informal rules provided an opportunity for individuals to profit by reducing uncertainty about property rights.

Historical documents about Maine's formal and informal rules illustrate the uncertainty often surrounding land titling. Taylor writes about the confusion of ownership in the period 1750–1820. It was common that

in locales where competing sets of gentlemen held conflicting titles to the same turf, settlers confronted a risky, complex legal situation rife with cloudy choices, new dangers, and potential opportunities.... Exasperated by the proprietors' confused land titles and evasive legal tactics, many settlers concluded that wilderness land and resources properly belonged to the first man who exploited them" (Taylor 1989, pp. 5–6).

Often, neither the public nor the courts respected legal title, even when they could establish it. Absentee ownership provided opportunities for squatters to claim others' land. Taylor writes, "Improvements made by hostile squatters weakened a proprietor's standing on the land as well as in the courtroom...Consequently, conspicuous improvements—fences, haystacks, cabins, and barns—became the focal points in jockeying for the strongest legal position" (1989, pp. 8–9). Development of land in these ways not only signaled ownership to courts, but it was also a strong signal to potential squatters who may have considered falsely claiming ownership. Of course, the formal rules were important too.

At the conclusion of the Revolutionary War, when land became public domain, "private claims were many, widely scattered, and required much litigation extending over a long time for their final settlement" (Hibbard 1939, p. 8).

Settler's informal norms influenced federal land policy. Writing about the federal government's desire to profit from disposal of public lands, Hibbard concludes, "it was just as inevitable that the land would be settled in accordance with the customs, already well-established" (Hibbard 1939, p. 4). The divergence of these norms from the prevailing legal establishment was apparent. Hibbard continues, "These customs were without legal form and void of embellishments in the nature of recognized, widely accepted, doctrines. Not without doctrines stoutly defended by those practicing them, however" (Hibbard 1939, p. 4). Despite federal law, social norms affected settlements on the frontier, and the government often had little recourse: "The pioneers were settling the wilderness; the government wanted it settled. Hence the long lists of acts condoning the violation of the newly enacted land laws" (Hibbard 1939, p. 5). Hibbard goes so far as to conclude, "Conditions outweigh doctrines" (1939, p. 4).

Shortcomings of the formal and informal rules on land acquisition presented an opportunity for entrepreneurial profit, but only to someone who knew the underlying nature of the norms. Just as conspicuous improvements strengthened claims to land, apple trees were crucial for creating focal points and signaling rightful ownership to other settlers and to formal courts of law. In fact, "in the pioneer history of most American communities the first apple crop once marked a first stage of permanency" (Price 1967, p. 39).

Informal norms arose to mediate conflict and the solutions manifesting from those norms were often novel and effective. Without knowledge of the underlying need the norm serves—the ability of conspicuous improvements to strengthen property rights and the fact that apple trees accomplished this—Chapman would not have been alert to the entrepreneurial profits from having apple trees ready to sell beyond the settled frontier.

Chapman was responding to formal institutions that were already in place, but as Hibbard noted, the government altered many of these laws after they were repeatedly violated. This suggests substantial alignment between the underlying norms and the indigenous institutions constructed exogenously by the government. The role of conspicuous improvements was an indigenous institution that emerged as settlers strove to strengthen property rights. There was substantial correspondence between these institutions, so the property rights strengthened by Chapman's apple trees were effective and likely to persist.

### 3.2 Local knowledge of commercial conditions

Knowledge of commercial conditions complemented Chapman's knowledge of local social conditions. Apples were a versatile source of nutrition year-round; they were eaten, used to make sauces in winter, turned into apple butter, and perhaps most importantly, made into hard apple cider<sup>6</sup>. Due to its nutritional value and the lack of alcoholic substitutes, "[n]o well-established home could exist long without [cider], and usually many barrels were essential" (Price 1967, p. 39). In fact, settlers often substituted cider for wine and beer, and even for coffee, tea, juice, and water (Pollan 2001, p. 22).

Chapman recognized that apple orchards took little maintenance once planted. "Land was cheap," Price writes, "and the orchards when once started took little care," so settlers' main concern was obtaining saplings to speed land acquisition (Price 1967, p. 40). Having lived for many years in the Northwest Territory, Chapman knew these needs well.

Chapman was able to estimate years ahead of settlers' arrival where they would want to live. He always started his nurseries before the main flood of settlers arrived. Chapman's "chain of appleseed plantings had already arrived before the big push...[he] had acquired not only an amazing ability to get about over the trans-Appalachian landscape but a clear sense of future migration routes for the first-comers" (Price 1967, pp. 48–49, 63). To become familiar "with the land, to judge its course of settlement, to plant in strategic spots, and to know where all the cabins were going up had become his business" (Price 1967, p. 84). "Anyone who had seen him working west...would have known that John had judged with uncanny accuracy the strategic moment to arrive just ahead of another big land push" (Price 1967, p. 187). His knowledge of the ability for apple trees to secure property rights both formally and informally made Chapman alert to the business of planting beyond the frontier, which no one had done before.

### 3.3 Subjectivism of interpretative schema

Chapman had a unique interpretive schema with which to view the world. He was a naturalist who followed a quasi-pantheistic religion, Swedenborgian Christianity. Swedenborgians emphasized the importance of harmony with nature and believed "the material world is the effect and externalization of divine ideas" (Teahan 1979,

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<sup>6</sup> As Pollan notes, "Just about the only reason to plant an orchard of the sort of seedling apples John Chapman had for sale would have been its intoxicating harvest of drink, available to anyone with a press and a barrel" (Pollan 2001, pp. 21–22)

p. 68). The Doctrine of Correspondence dictated that followers should understand Biblical text by its “pure ‘correspondence,’ i.e. in symbols derived from nature. Every natural object is conceived to be the effect, and therefore the expression, of spiritual causes. Those effects ‘correspond’ to those causes; hence their capacity, when properly understood, to reveal the spiritual meaning contained in them” (De Beaumont 1917:131) To Chapman planting apple trees was more than a good business; working with nature was a pursuit of greater spiritual understanding.

Correspondence between two Swedenborgian church members reveals Chapman was an avid evangelist: “I have sent some books to Mr. Chapman...he travels about in Ohio and has much to do with appletrees; I am told he is a singular man but greatly in love with the New Church doctrines and takes great pains in deseminating [sic] them” (Price 1967, p. 125). In a letter between two church elders, Chapman is described as a “zealous member of the New Church, and one who appears most anxious to spread the doctrines of truth...the great object of his life appears to be to promote the doctrines” (Price 1967, pp. 128–129). Elsewhere, church members describe him as “very instrumental in spreading the truth” (p. 131).

Chapman used his profits to further Swedenborgianism. A New Church convention pamphlet from 1822 claims that Chapman’s business is “pursued for the chief purpose of giving him an opportunity of spreading the doctrines throughout the western country” (Price 1967, p. 132). The author of that pamphlet may have overstated Chapman’s motivation, but the fact that Chapman was presented as a role model is further indication of the seriousness of Chapman’s religious devotion.

His religious beliefs inspired a lifestyle that most men found prohibitively difficult, and he was physically well suited to the rugged life his endeavor required. He preferred sleeping on the ground to a bed and was comfortable eating things that most men would not (Price 1967, p. 7). Contrary to popular conception, there is no evidence that Chapman ever wore a pot on his head or a potato sack, but it is clear that his physical appearance was striking to people, even on the frontier. One young man described Chapman:

He was always clad very poorly, old slipshod shoes without stockings, the cast-off clothes of some charitable miser. He would not ask for any, and I suppose he never purchased any. He would eat at the table with any family and liked good victuals, but he would also eat scraps which were designed for the slop barrel. He slept on the floor on an old blanket. His old slipshod shoes were untidy looking and he seemed to care very little about his person. I never heard of his being sick (Price 1967, p. 159).

Swedenborgian doctrines that placed a high value on harmony with nature heavily influenced Chapman’s interpretive schema. Chapman’s religious beliefs and physical ability led him to devise a plan “for moving [his nurseries] with the frontier....So far as records now make known, no one else ever did” (Price 1967, p. 39)<sup>7</sup>. He was alert to the profits of planting appletrees in the farthest parts of the frontier specifically because of his devotion to a quasi-pantheistic religion.

<sup>7</sup> Rent dissipation, a problem associated with some land laws, was limited to the extent that Chapman was especially capable of engaging in such business endeavors. See Anderson and Hill (1983, 1990) for discussions of the affect of formal rules on the potential for waste in land acquisition.



## 4 Conclusion

Chapman's success as an entrepreneur stems from his alertness to the value of apple trees on the frontier, and this alertness was possible only because he had local knowledge about the social and commercial conditions in the Northwest Territory and because he interpreted the world through Swedenborgian doctrines. The Kirznerian emphasis on local knowledge and the subjectivism of interpretation shows that some people are more likely to be alert than others. It is likely that if government restrictions prevented Chapman from owning land or maintaining apple orchards, this profit opportunity would have gone unnoticed.

Economic restrictions are relatively more harmful when alertness is not random because there is no assurance that others will identify the same profit opportunities. As a result, land restrictions such as California's Alien Law of 1913 (which prevented Japanese immigrants from purchasing farmland) are more detrimental than previously understood. Women throughout most of history faced legal restrictions on their ability to contract and to own property (Fleck and Hanssen 2005, p. 1) and even married women in the United States could not make contracts, buy and sell property, sue or be sued, or draft wills until the 20th century (Geddes and Lueck 2002, p. 1079). Entrepreneurial discovery is more harmful when others will not necessarily identify the unique opportunities that members of these discriminated groups would have been alert to.

**Acknowledgements** The author thanks an anonymous referee, Peter Boettke, Stewart Dompe, Josh Hill, Emily Schaeffer, Richard Wagner, Larry H. White, and especially Peter Leeson for helpful comments. All remaining errors are, of course, the author's own. He gratefully acknowledges generous research support from the Earhart Foundation and the Mercatus Center.

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