

# WINNING AN UNFAIR GAME: HOW A RESOURCE-CONSTRAINED PLAYER USES BRICOLAGE TO MANEUVER FOR ADVANTAGE IN A HIGHLY INSTITUTIONALIZED FIELD

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## ABSTRACT

*In this study we examine how resource-constrained organizations can maneuver for competitive advantage in highly institutionalized fields. Unlike studies of institutional entrepreneurship, we investigate competitive maneuvering by an organization that is unable to alter either the regulative or normative institutions that characterize its field. Using the “Moneyball” phenomenon and recent changes in Major League Baseball as the basis for an intensive case study of entrepreneurial actions taken by the Oakland A’s, we found that the A’s were able to maneuver for advantage by using bricolage and refusing to enact baseball’s cognitive institutions, and that they continued succeeding despite ongoing resource*

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*constraints and rapid copying of their actions by other teams. These results contribute to our understanding of competitive maneuvering and change in institutionalized fields. Our findings expand the positioning of bricolage beyond its prior characterization as a tool used primarily by peripheral organizations in less institutionalized fields; our study suggests that bricolage may aid resource constrained participants (including the majority of entrepreneurial firms) to survive in a wider range of circumstances than previously believed.*

**Keywords:** Bricolage; Major League Baseball; institutionalized fields; resource-constraints; competitive advantage

Images of institutionalized organizational fields evoke expectations of stability and behavioral constraint structured by rules, accepted ways of doing things, and common ways of looking at the world. These three “pillars” of institutionalization – which Scott (2001) labeled regulative, normative, and cognitive institutions – help explain a great deal of the observed regularity in organizational behavior. Against this backdrop, however, institutional research has increasingly identified processes through which organizations in highly institutionalized environments may find ways to maneuver for their own advantage, sometimes creating organization-level innovations that drive interorganizational responses and field-level adaptation.

At least two circumstances increase the likelihood that organizations will be able to maneuver for advantage. First, the resource advantages enjoyed by elite organizations and by groups of organizations adopting a common cause may allow them to alter the rules of competition in ways that redefine what it means to compete at the core of a field (Scott, 2001, p. 27). Well-documented cases of “institutional entrepreneurship” (DiMaggio, 1988; Maguire, Hardy, & Lawrence, 2004) involve actors envisioning and enacting the regulatory and normative changes they desire. Second, resource-constrained organizations may reject field-level normative pressures and respond instead to local competitive pressures, in effect moving their activities *away* from the competitive core by competing in a somewhat different game (Kraatz & Moore, 2002; Kraatz & Zajac, 1996). Such maneuvers are not attempts by institutional entrepreneurs to change the field, but rather the attempts of disadvantaged organizations to find alternative ways to thrive.

These findings also suggest that in highly institutionalized fields, organizations that are neither resource-advantaged nor able to define and play

a different game will face tremendous restrictions on their ability to maneuver for competitive advantage at the core of the field. Current theorizing suggests that such organizations – which are quite commonplace (Hannan & Freeman, 1989) – are likely to be cultural or institutional “dopes” (Delmestri, 2006; Garfinkel, 1967; Giddens, 1984), enacting institutionalized rules and processes, reproducing their own disadvantages, and, hence, underperforming regularly (Bourdieu & Passeron, 1990). In other words, resource-disadvantaged organizations forced to compete directly against richer players are in effect constrained to play an unfair game.

But organizations sometimes surprise us by finding ways to maneuver competitively despite facing combinations of institutional and resource constraints. Even though the rules of the games in which they must compete remain largely unchanged, they find ways to increase the usefulness of the limited resources available to them (Penrose, 1959). In this chapter, we focus on two primary questions: First, how can resource-disadvantaged actors (i.e., ones that are not free to retreat to the periphery of their highly institutionalized field) compete over time, especially when their innovations generate adaptive responses by resource-rich competitors? Second, what does the creative maneuvering of resource-constrained participants tell us about the nature of organizational resources and resource constraints?

We argue that resource-constrained actors may compete by engaging in bricolage, and through this process resist and sometimes change the cognitive institutions, or “industry recipes” (Spender, 1989), that determine what constitutes a resource and how resources are deployed, even while the regulative and normative institutions remain largely unchallenged and unchanged. This approach stands in contrast to the practices of institutional entrepreneurs, who focus their efforts on the larger and more difficult tasks of also changing the regulative and normative institutions governing a field (Garud, Hardy, & McGuire, 2007; Kraatz & Block, 2008). Our analysis of how firms challenge cognitive institutions departs from prior work in that we focus only on changes in this institution, and we do so at the organizational, rather than field level of analysis. Further, we study the behaviors of actors whose motivations are to find alternative ways of competing despite their chronically low levels of resources – a condition typical of most entrepreneurial firms – not to revolutionize the field.

We pursue these questions by reexamining some recent changes in Major League Baseball (MLB), and especially the remarkable success of the Oakland A’s, who entered the popular imagination in the United States through Michael Lewis’s (2004) bestselling book *Moneyball*. Baseball is a particularly good setting for our study, because MLB is extraordinarily

mature and highly institutionalized. The game itself is composed of a constraining and stable set of rules that closely define how it is to be played, both on and off the field. Individual teams can neither change the rules of play nor choose to play a different game. At the same time, the wealth of information about specific teams, and the transparency and outcomes of their strategic actions make baseball a useful context to explore the questions before us at the organizational level of analysis (Kraatz & Block, 2008). Thus, rather than constraining our view of what constitutes an “entrepreneurial” firm to only those who are young and/or small, we focus on entrepreneurial behaviors, and how even larger and older firms can be useful for generating insights valuable to all types of entrepreneurial firms. Our approach harkens back to research on entrepreneurial behavior by individuals working within organizations, such as that by McClelland (1961).

Prior theorizing about bricolage has suggested that constructivist notions of resource environments are useful for our understanding of entrepreneurship and of the creation of resource-based advantages (Baker & Nelson, 2005; Garud & Karnoe, 2003). This view holds that resources are what organizations make of them, and that their potential value is often entirely hidden to observers until after someone makes use of them in a novel way. Whereas earlier research on organizational bricolage has focused mainly on its use by peripheral participants or those in immature and less institutionalized organizational fields (Baker & Nelson, 2005; Garud & Karnoe, 2003), our study uncovers the role of bricolage in the survival and success of resource constrained participants *at the center of a mature and economically and culturally important field*. Our study thus repositions notions of bricolage toward the core of competition, while also providing insights into processes of change in highly institutionalized environments.

In the next section we discuss why the Oakland A’s are a useful example of successful bricoleurs at the core of a highly institutionalized environment.

## **SUCCESSFUL BRICOLEURS: THE OAKLAND A’S**

The Oakland A’s are a tightly resource-constrained MLB team that managed over the 1996–2006 decade to win many more games than would be expected given their inability to pay the salaries required to compete for and retain star players (Hall, Szymanski, & Zimbalist, 2002; Lewis, Sexton, & Lock, 2007). Through the early 1990s, the A’s were a resource-rich team with one of the highest payrolls in MLB. However, the 1995 sale

of the A's to new owners, and their desire to increase profitability led to a drastically reduced payroll budget – from approximately \$33.4 million in 1995 to \$22.5 million in 1996 and only \$12.9 million in 1997 (Mondout, 2007). Such cuts severely restricted the availability of the main resource presumed necessary to achieve success (i.e., highly talented major league players) and created a natural quasi-experiment for our study (Cook & Campbell, 1979).

In each of the five years before a new management team led by General Manager Billy Beane was put in charge (1993–1997), the A's won less than 50% of their games, compiling 329 wins and 415 losses (a 44.2% won–loss record, overall). However, during the first five years of Beane's tenure (1998–2002), the resource-constrained A's won 457 of 809 (56.5%) games, winning 63% or more of their games in two different years. Winning 63% of the games in a season typically means having the best or second best record among all 30 MLB teams, and is highly unusual for a low payroll team. For example, in 2002, the New York Yankees, number one in payroll in MLB (\$126 million) and the Oakland A's, number 27 in payroll (\$40 million), tied at 103 wins for the best record in all of MLB.

Table 1 summarizes the A's relative performance during the period 1996–2006. For example, the row for 2002 shows that the A's paid only 44% as much per win as the *median* team in the league, ranked by payroll dollars per regular season win. No team paid less per win than the A's, and only one team had a lower total payroll. The A's made the playoffs by winning 63.6% of their games. Across the 11-year period, the A's paid *less than the median payroll dollar per win every year and less than half the median in six of the years*. Despite being in the *bottom* quartile in total payroll every year, the A's won more than half of their games in 8 of 11 seasons. This earned the A's five appearances in the playoffs, which put them in the *top* quartile of the league for this period.

However, the A's failed to sustain this superior performance after 2007, as other MLB teams emulated their approach. Between 2007 and 2011 the A's only won 47.1% of their games on average, and did not return to the playoffs (Jaffe, 2012), illustrating the difficulties in successfully competing with resource constraints once competitors adapt to your innovations. Their performance during this five-year period was commensurate with expectations based on their payroll level. Table 2 provides data on winning percentage, attendance, and payroll for the 2007–2011 period. It is notable that in the 16 years of Billy Beane's reign that the Oakland A's ranked 6 out of 30 in winning percentage, and 25th out of 30 in both payroll and attendance. As other small market and large market teams caught on to

**Table 1.** A's' Relative Performance.

Year	Average Team's \$/Win	Median Team's \$/Win	A's \$/Win	A's \$/Win as % of Median \$/Win <sup>a</sup>	No. of Teams Paying Less Per Win than A's <sup>b</sup>	No. of Teams with Lower Payroll than A's <sup>b</sup>	No. of Teams Not Making Playoffs <sup>b</sup>	A's Made Playoffs? <sup>c</sup>	A's Wins <sup>d</sup>
1996	401,841	425,001	288,770	68	5	6	20	No	78
1997	477,849	509,964	198,152	39	1	0	20	No	65
1998	517,026	540,147	251,150	46	2	2	22	No	74
1999	600,449	599,672	289,757	48	4	6	22	No	87
2000	704,683	724,572	351,333	48	4	5	22	Yes	91
2001	815,537	792,944	331,478	42	1	1	22	Yes	102
2002	896,528	867,691	385,240	44	0	1	22	Yes	103
2003	882,856	883,911	523,550	59	2	7	22	Yes	96
2004	841,116	816,218	657,419	81	12	14	22	No	91
2005	875,469	855,264	629,838	74	6	8	22	No	88
2006	950,257	963,137	669,280	69	4	9	22	Yes	93

All data from MLB.com, calculations by authors.

<sup>a</sup>The ordering for this measure is dollars per win measured for each team. Anything less than 100% means that the A's are paying less per win than the median team in this ranking.

<sup>b</sup>For 1996–1997, there were 28 MLB teams, since 1998, there have been 30.

<sup>c</sup>During the 11 years listed, eight teams were in the playoffs each year. The 88 appearances were distributed such that 23 teams had four or fewer appearances (9 had zero appearances), and only six teams besides the A's had five or more appearances.

<sup>d</sup>MLB teams generally play 162 regular season games, thus, a team winning 82 games is doing “better than average” overall for the league.

**Table 2.** 2006–2011 Winning Percentage, Attendance, and Payroll<sup>a</sup>.

Team	W	L	Pct	Attendance	Payroll
New York Yankees	1369	895	0.605	51,322,316	\$2,250,097,312
Boston Red Sox	1285	982	0.567	39,145,041	\$1,612,223,731
Atlanta Braves	1281	985	0.565	37,642,146	\$1,235,520,754
St. Louis Cardinals	1247	1019	0.550	45,507,278	\$1,146,887,994
Anaheim Angels	1221	1047	0.538	40,753,998	\$1,223,135,021
San Francisco Giants	1208	1058	0.533	42,094,720	\$1,096,661,143
Oakland Athletics	1206	1060	0.532	24,968,705	\$691,682,891
Philadelphia Phillies	1201	1066	0.530	37,021,149	\$1,178,338,229
Los Angeles Dodgers	1184	1083	0.522	47,049,011	\$1,329,229,120
Chicago White Sox	1179	1089	0.520	28,955,888	\$1,073,519,832
Houston Astros	1163	1104	0.513	37,731,351	\$1,038,700,351
New York Mets	1156	1111	0.510	39,943,233	\$1,465,690,348
Minnesota Twins	1153	1114	0.509	28,660,536	\$765,234,204
Cleveland Indians	1151	1117	0.507	33,185,050	\$897,281,014
Texas Rangers	1145	1123	0.505	34,900,419	\$1,038,996,922
Toronto Blue Jays	1143	1124	0.504	27,843,667	\$900,066,297
Arizona Diamondbacks	1129	1139	0.498	36,109,901	\$948,176,895
Seattle Mariners	1120	1147	0.494	38,128,018	\$1,164,266,790
Chicago Cubs	1110	1157	0.490	41,857,571	\$1,290,494,258
San Diego Padres	1102	1167	0.486	34,018,968	\$724,830,642
Cincinnati Reds	1094	1175	0.482	29,027,251	\$790,854,221
Florida Marlins	1081	1185	0.477	19,650,689	\$530,838,679
Colorado Rockies	1074	1195	0.473	38,641,011	\$893,893,457
Milwaukee Brewers	1062	1204	0.469	32,999,563	\$773,368,076
Detroit Tigers	1039	1228	0.458	31,125,219	\$1,052,904,735
Tampa Bay Rays	1013	1252	0.447	21,195,863	\$579,093,003
Montreal Expos	993	1273	0.438	20,579,468	\$616,918,761
Baltimore Orioles	990	1276	0.437	35,679,071	\$1,040,841,965
Pittsburgh Pirates	957	1307	0.423	24,583,214	\$559,327,156
Kansas City Royals	946	1320	0.417	21,943,846	\$647,640,543

<sup>a</sup>Source: <http://www.hardballtimes.com/main/content/article/50th-birthday-billy-beane/>

Beane’s methods, which were primarily aimed at evaluating run production, Beane and others began to turn their attention to innovating on run prevention, focusing on new statistics developed for pitching and defense. In 2012, the A’s returned to the playoffs, while again placing in the bottom 10 in attendance and payroll.

The behaviors that allowed the A’s to maneuver successfully despite tight resource constraints between 1998 and 2006 match patterns of bricolage that have been previously described (Garud & Karnoe, 2003; Hmieleski & Corbett, 2006; Levi-Strauss, 1967). Bricolage is defined as making do by

applying combinations of the resources at hand, including those available cheaply or for free, to new challenges (Baker & Nelson, 2005). As Phillips and Tracey (2007) observed, bricolage offers a useful lens for understanding entrepreneurial behavior in institutionalized environments (Rao, Monin, & Durand, 2005; Stark, 1996). The crux of our preliminary answer to the two questions we posed above thus involves how the Oakland A's "made do" by applying combinations of the resources at hand to the challenges they faced (Baker & Nelson, 2005).

First, the A's have been able to find room to maneuver and compete effectively at the core of a highly institutionalized field by engaging repeatedly in bricolage. Their success has challenged long-held institutional beliefs and practices. Their initial use of bricolage in the late 1990s – which was informed by a longstanding but marginalized approach to analyzing baseball statistics known as "Sabermetrics"<sup>1</sup> – resulted in competitor responses in the early to mid-2000s that made resources previously available cheaply too expensive for the A's.<sup>2</sup> In a subsequent use of bricolage beginning around the publication of *Moneyball* – in which the A's seem to be contradicting both some Sabermetric "truths" and their own prior espoused beliefs – they found *new* ways to make do with resources now undervalued by other competitors, making it to the playoffs in both 2003 and 2006. These observations provide the basis for our answer to the second question, which asked what could be learned from the creative behavior of resource-constrained players about the nature of resources.

## INSTITUTIONAL THEORY AND MANEUVERING FOR ADVANTAGE

For many years, the central pursuit of neo-institutional theory was confirming and explaining the existence of constraining stability and order in mature institutional fields (Scott, 2001; Tolbert & Zucker, 1996). The possibility of change was seen primarily in the form of organizational and industry responses to exogenous social, technological, and legal shocks (Clemens & Cook, 1999; Hinings & Greenwood, 1988; Meyer, 1982). More recent scholarship, often investigating endogenous sources of change, has identified agents and processes of competitive maneuvering under constraints, interests that are at the intersection of neo-institutional concerns with constraint and "old" institutionalism's concerns with human agency and change (Hirsch & Lounsbury, 1997; Stinchcombe, 1997). Organizations

at the core of mature, deeply institutionalized fields exhibit the “paradox of embedded agency” (Seo & Creed, 2002, p. 226). When organizations are embedded within and benefit from the status quo, they become less likely to imagine or attempt institutional changes (Greenwood & Suddaby, 2006).

Nonetheless, competitors at the core of such fields *do* sometimes envision and mobilize their resources in attempts to change the nature of the field and of competition at its core. For example, Greenwood and Suddaby (2006) developed a model of “elite institutional entrepreneurship” by studying how major international accounting firms overcame their embeddedness in the institutional status quo to “envision and impose” institutional changes in the form of multidisciplinary practices encompassing a broad range of consulting and legal services. These practices represented a substantial change and an increase in competitive heterogeneity at the core of competition among central players in public accounting, and they challenged other central players still trying to compete in a narrow, traditional span of services.

Firms disadvantaged by the status quo (e.g., most small or new firms) may be likely to envision ways to maneuver for advantage, but because of resource constraints they may be unable to enact their visions. During early processes of field development and institutionalization, maneuvering by peripheral players sometimes results in substantial but unforeseen field-level change. For example, in Leblebici and colleagues’ (Leblebici, Salancik, Copay, & King, 1991) study of the early development of the radio broadcast industry in the United States, core actors such as RCA, GE, AT&T, and Westinghouse negotiated, partnered, and competed with one another to shape industry practices, rules, and standards to their own advantage. At the same time, resource-disadvantaged “fringe” organizations (Leblebici et al., 1991) opened new competitive fronts and activities in their attempts to deal with local problems and resource deficits. Though their focus was local, the success of their work eventually altered many of the primary activities at the core of competition in the radio broadcast industry, including such basic features as who would determine broadcast content, who would create it, and who would pay for it. However, the fringe actors responsible for generating these innovations remained on the periphery of the industry, even as their innovations migrated to the core and became institutionalized as the industry matured.

Even in highly institutionalized fields, resource-constrained organizations sometimes respond to local competitive pressures by pursuing changes that move them away from the core of the field. For example, Kraatz and his colleagues’ studies of changes among American liberal arts colleges (Kraatz & Moore, 2002; Kraatz & Zajac, 1996) found that despite strong normative

pressures against bringing “professional” programs such as business and computer science into liberal arts curricula, many colleges added professional programs in response to local market demands. Such changes – which moved these liberal arts colleges into competition with other colleges and universities offering professional programs – were particularly common among lower-status, resource-constrained liberal arts colleges.

Together, such studies of competitive maneuvering in institutional fields suggest that (1) well-organized institutional entrepreneurs may sometimes impose change directly and alter the nature of competition even in very mature fields by reshaping regulatory and normative institutions; (2) organizations may reject strong institutional norms and find advantage by escaping the traditional core of competition in favor of serving different local demands; and (3) resource-disadvantaged-organizations seeking local solutions in emerging industries may in the process shape the core of a developing field to their advantage.

Because MLB is a mature institutional field with stable and largely inescapable rules governing competition, however, resource-constrained baseball teams *have none of these options available to them*. Every team is forced to engage in the same structured set of competitions. Because of these regulative and normative constraints, the primary arena in which resource-disadvantaged teams are able to maneuver for advantage is largely limited to how they think about and mobilize their resources, that is, by the extent to which they adhere to or reject the cognitive institutions of MLB. Are resource-constrained enterprises in such settings doomed to failure?

In the following sections we describe the intensive case study methodology applied in this study and then explore how the Oakland A’s bricolage allowed them to compete by challenging the cognitive institutions of MLB.

## METHODS

### *Setting and Data*

This chapter reports on an embedded case study (Yin, 1984) of MLB, focusing on innovative behaviors by one team, the Oakland Athletics (“A’s”), and responses by other teams to these innovations. Careful observers of baseball could point to other cases in which teams, leagues, and various stakeholders have engaged in bricolage, even forms of bricolage very similar on some dimensions to the behaviors we analyze in this study. However, the natural quasi-experiment that ensued when the A’s were sold to

new owners who drastically cut the team payroll makes this a “revelatory” case (Yin, 2003, p. 42) for examining an organization’s responses to tight resource constraints under conditions in which very little else has changed.

The so-called “Moneyball phenomenon” has drawn close attention from analysts, journalists, other teams, and even other professional sports, and the resulting close documentation of the focal behaviors and responses by stakeholders with varied perspectives makes the case highly accessible for our analysis. Events in the case were outlined by journalist Michael Lewis and reported in his bestselling book, *Moneyball*. During 2002, Lewis spent extensive time with the A’s, conducting dozens of interviews and gaining unprecedented access to team players and staff, and observing what are usually secretive meetings and decision-making processes. He was also permitted to report on what he found without interference from the team or its executives (Lewis, 2004, p. 304). Lewis’s work provided important insights and facts about the case that would otherwise be unavailable, and helped point us toward multiple other sources of data, including some severe critics of the A’s approach to baseball. For example, in 2006, John Schuerholz, the highly successful General Manager of the Atlanta Braves, wrote (along with Larry Guest) his own book about how baseball teams were to be built and how players were to be scouted. In it, Schuerholz was highly critical of the “Moneyball hype” and its attack on traditional scouting and player evaluation.

Some have challenged whether Lewis’s focus on Billy Beane was biased in the service of telling a more compelling narrative. Arguably, other participants such as Sandy Alderson (the A’s prior general manager who brought Beane into the A’s front office) should perhaps have received more credit for individual decisions or the introduction of Sabermetric approaches to analyzing players. Nevertheless, the basic events are not in dispute, and the narrative’s focus does not materially affect the theoretical arguments we make or the conclusions we draw from this case. Further, we have corroborated Lewis’s main facts and our central arguments with research conducted by other baseball experts.

Unsurprisingly, baseball has generated hundreds of scholarly studies. We drew on historical and cultural studies of MLB (e.g., Barzun, 1954; Tygiel, 2000) to understand the degree and dimensions along which baseball is institutionalized in the United States. We also drew on studies of more specialized subjects, such as the role and history of “scouting” (Kerrane, 1999; Perry, 2006; Shanks, 2005). The statistical analysis of baseball has a long history, and the more recent history of “Sabermetric” analysis – which is a primary focus of Lewis’s account – has generated a large number of

historical and biographical (e.g., Gould, 2004; James, 1994) studies, as well as a spate of studies applying increasingly detailed and sometimes even exotic statistical modeling to baseball phenomena (e.g., Hall et al., 2002; Keri, 2006a; Schmidt & Berri, 2001).

We drew heavily on these studies for two purposes: first, to understand how it was that Sabermetric analyses and insights could be so freely available and for so long before anyone made use of them in MLB; and second, to understand the context and outcomes of strategic maneuvering by the A's and other teams. Overall, an astounding variety and detail of statistics and statistical analyses about baseball are widely available, and we made use of some of these in the work reported here.

The professional baseball press, various pundits, and thousands of bloggers have continued to respond in various ways to *Moneyball*. In particular, many took exception to Lewis's attack on the value of "traditional scouting" techniques, practices, and assumptions in MLB. A "Google alert" for search results containing the terms "Moneyball" and "wrong" continued generating new hits virtually every day between 2005 and 2007. The controversy over the implications of *Moneyball* for traditional scouting, in particular, generated a great deal of impassioned discussion, ranging from profound and well-researched arguments (Perry, 2006) to pure silliness. Particularly useful have been books such as *Built to Win* (Schuerholz & Guest, 2006) by former Atlanta Braves general manager John Schuerholz, as well as books detailing how the Boston Red Sox combined Sabermetric principles with very large amounts of money to build a successful team (Goldman, 2005; Mnookin, 2006). The controversy caused Lewis to add a chapter to the second edition of his book labeled, "Inside Baseball's Religious War." Largely because we suspect that fan pressures play an important role in MLB, we also read broadly across baseball media and blogs.<sup>3</sup> Finally, we had discussions with several MLB general managers and executives to whom we promised anonymity.

### *Analysis*

The A's responded to the imposition of tight resource constraints by finding ways to create useful combinations of resources, that is, baseball players that were available to them cheaply because other teams failed to see the same value in these players. At first blush, this pattern seemed to resonate with current ideas about bricolage in the organizations literature (Baker & Nelson, 2005; Garud & Karnoe, 2003; Baker, Miner, & Eesley, 2003). While

bricolage can theoretically occur in any type of organizational context, prior research on bricolage has focused on marginal businesses in degraded environments (e.g., Baker & Nelson, 2005), young industries in technological flux (e.g., Garud & Karnoe, 2003), and firms avoiding the core of competition (e.g., Kraatz & Zajac, 1996). In contrast, the bricolage we consider was accomplished by a resource-constrained organization at the core of what is an extraordinarily institutionalized field.

The structure of our analysis therefore focused initially on two factors. First, we examined the A's behavior through the lens of bricolage, attempting to understand how well their behavioral patterns fit with current conceptions of bricolage and whether the patterns challenge or extend current conceptions. This task involved iteration between the data we continued to gather and prior notions of bricolage in a process that required a great deal of "muddling through" and tolerance of slow progress (Denzin & Lincoln, 2000; Miles & Huberman, 1994).

Second, we examined the A's actions in the context of trying to understand the institutional environment in which MLB teams were embedded and how this environment enabled the A's to successfully redefine and revalue resources. In the next section we demonstrate the highly institutionalized nature of baseball in the United States, the taken-for-granted nature of the industry recipe for success in this environment, and what counts as a resource. We then examine the A's response to resource constraints in terms of their behaviors' fit with prior conceptions of bricolage. We then discuss the implications of this study for institutional theory and for our understanding of bricolage as a means for organizing and competing with other firms, and particularly as a means for resource-constrained entrepreneurs to find new ways to compete.

## **THE INSTITUTIONALIZATION OF BASEBALL**

A primary reason baseball interests us as the context for this study is that baseball generally, and MLB in particular, are highly "institutionalized" in all theoretically significant senses of the concept, whether one adopts the theoretical perspectives of the old (Hirsch & Lounsbury, 1997; Selznick, 1966) or the new (DiMaggio & Powell, 1983; Meyer & Rowan, 1977) institutionalism. Borrowing Scott's (2001) typology, all three pillars of institutionalization – the regulatory, the normative, and the cognitive – are well developed and complementary in baseball. Below, we first touch briefly on the regulatory and normative context of baseball in the United States.

We then describe the cognitive institutionalization of baseball – in terms of the MLB “industry recipe” – which is central to our argument.

*The Regulatory and Normative Institutions of Major League Baseball*

Baseball is embedded within and protected by a remarkable legal structure that supports the concepts and practices of the baseball “draft” and “free agency,” which plays an important part in how resources are valued and distributed in baseball. MLB is protected by the strongest exemptions from antitrust legislation provided to any American sport, and has been so protected through a variety of interpretations and challenges since before 1922, when Justice Oliver Wendell Holmes wrote a decision favoring the exemptions. In 1978, the US Congress anointed “USA Baseball” as the governing body for the sport, including representing baseball on the US Olympic Committee and the International Baseball Federation. With very strong ties to MLB (which acquired all commercial assets of USA Baseball in July 2006) USA Baseball governs the baseball activities of over 12 million US amateur players ([mlb.com/NASApp/mlb/usa\\_baseball](http://mlb.com/NASApp/mlb/usa_baseball); [espn.go.com/mlb/s/2001/1205/1290707.html](http://espn.go.com/mlb/s/2001/1205/1290707.html)).

Baseball fans follow over 300 minor league teams, more than 1,000 intercollegiate teams, and over 30,000 high school baseball and softball teams, while also watching millions of pre-high school children play in games administered by the Little League and similar organizations. In the major leagues, attendance has grown recently to about 75 million people annually (MLB.com), a figure that far surpasses the annual attendance of American professional football, basketball, and hockey combined.

Baseball prides itself on consistency and comparability across time. Deeply socialized fan expectations about what is authentic in baseball strongly delimit the “acceptable” changes MLB can consider (Barzun, 1954; Trilling, 1972). A simple rule change such as the 1972 creation of the “designated hitter” in the American League (one of two divisions in MLB) still invokes heated debate 40 years after its introduction. Since the same baseball statistics have been collected on players for over 100 years, fans can compare and debate the feats of players in different eras.<sup>4</sup> MLB’s 122 mostly multipart rules (supported by a formal lexicon) demonstrate a high degree of stability and fine-tuning. Indeed, as evolutionary paleontologist and baseball scholar Steven J. Gould (2004, p. 183) notes, “Baseball has been a bastion of constancy in a tumultuously changing world, a contest waged to the same purpose and with the same basic rules for one hundred years.”

Complementing all of this, MLB's stability, traditionalism, and institutional values and practices are encouraged by its incestuous recruitment practices. In the early days of national baseball leagues, successful players could and sometimes did become successful baseball "magnates," as owners then referred to themselves (Tygiel, 2000). Those days are probably past, but once we get beyond the owners, many of the roles in baseball – coaches, managers, scouts, some executive positions – are typically dominated by ex-players. As analyst Voros McCracken (quoted in Lewis, 2004, p. 241) notes, "The problem with major league baseball is that it's a self-populating institution. Knowledge is institutionalized. The people involved with baseball who aren't players are ex-players." As the president of one major league team pointed out to us, individual teams also develop cultures of "the way we do things around here" that sometimes persist across many years and through multiple changes of leadership. For example, Thomas Yawkey became the owner of the Boston Red Sox in 1932 (Goldman, 2005). A well-known segregationist and racist, Yawkey's Red Sox was the last team in professional baseball to become integrated, 12 years after Jackie Robinson broke the color barrier with the Brooklyn Dodgers.

*Cognitive Inertia and Enactment: The Baseball Recipe*

Spender (1989, p. 6) defined industry recipes as "what everyone who knows this industry understands," and as an element of "what experienced managers take uncritically as professional common sense." Industry recipes tend to become more coherent and closed over time, and this closure reduces the likelihood that those who have been socialized into an industry will mindfully consider alternatives (Fiol & O'Connor, 2003; MacKay, Masrani, & McKiernan, 2006; Matthyssens, Vandenbempt, & Berghman, 2006). Recipes are thus an important component of the paradox of embedded agency (Seo & Creed, 2002).

In mature, highly institutionalized industries, recipes shape behavior and how day-to-day events are experienced (Berger & Luckmann, 1967; Schutz, 1944). Those who have been socialized into these recipes and are engaged in enacting the patterns of behavior the recipes prescribe as normal and appropriate become more likely to simply reject or not even notice surprising information or new causal inferences about how to conduct their business (Giddens, 1984; Weick, 1979). The maturity and institutionalization of the industry recipe are reflected and supported by decision-makers' simplified mental models of the competitive resource environments in which

they operate (Geletkanycz & Hambrick, 1997; Huff, 1982; Porac & Thomas, 1990). At the individual level recipes function as cognitive heuristics or shortcuts (Thaler & Sunstein, 2004). Spender's fieldwork showed that recipes indicate the "appropriate resources" for constructing a business, including "models of the individuals the firm must employ" (1989, p. 177). Recipes thus represent the core aspects of institutionalization that define what are and are not resources, as well as how those resources are to be combined.

The MLB recipe defines what resources – in the form of player skills and attributes – are valued and describes how they are combined and deployed. The power of the recipe is such that, despite some notable exceptions to the contrary, by the late 1990s both informed observers and participants, including the formal leadership of MLB, had largely accepted as "fact" a financially deterministic model of competitive outcomes. Overall, the richest baseball teams who can afford to acquire the best players – as defined by the recipe – are expected to contend for championships, while resource-constrained teams are expected to fare poorly (Hall et al., 2002). This financial determinism has been widely considered a serious threat to MLB's overall appeal to consumers, who, even though biased in favor of their home teams, are presumed to be interested in watching relatively fair contests with uncertain outcomes (Levin, Mitchell, Volcker, & Will, 2000; Schmidt & Berri, 2001). In the case of MLB, it was against the backdrop of this highly institutionalized industry recipe that the possibilities for bricolage emerged.

### *Defining Player Value*

Many primary components of the MLB recipe are straightforward; we will describe these in order to provide a flavor for the recipe and a backdrop for understanding how the A's' bricolage violated and changed these highly legitimated beliefs. Perhaps most importantly, the recipe calls for the identification of potential players through the "scouting" process in which a group of baseball insiders – often former baseball players whose careers stopped short of MLB success – observe and get to know players on high school, college, and minor league baseball teams (Kerrane, 1999). The institution of scouting is important because scouts have traditionally played a dominant role in determining the set of players that MLB teams will attempt to acquire, and they are a primary mechanism through which the details of the baseball recipe are enacted and sustained year-to-year.

It is widely accepted that there are five “tools” that a baseball player can possess: the ability to run, throw, field, hit, and hit with power. A “five-tool player” is the standard baseball jargon for someone skilled in all of the fundamental abilities important to success as a “position” player, that is, the eight players with a designated fielding position on defense other than the pitcher (Kerrane, 1999; Lewis, 2004). It is axiomatic among baseball scouts that the fewer the tools, the less likely the individual is to succeed and the less valuable a player is considered to be.

Part of the reason why the tools are considered so important is that scouts are required to make judgments about players long before they have developed their full potential, or, in the case of high school players, before they have even developed physical maturity. Young players are judged by the apparent presence or absence of the tools, rather than by sole reliance on their performance in games. In turn, the practice of assessing potential early is driven by the regulated structure of the baseball labor market. Under its congressional exemptions from antitrust law, MLB is able to sustain a system through which a team that successfully “drafts” and signs an amateur player becomes, de facto, the only team able to bid on his services for up to 13 years (Carfagna, Farrell, & Hazen, 2006). The five tools serve as fundamental indicators of what a young player has the potential to become, and thereby shape MLB teams’ efforts to draft and sign particular amateur players.

Because players develop and mature in the years leading up to any opportunity they have to play in MLB, and because MLB is considered to be qualitatively different from lower levels of baseball, scouts have long considered the available objective statistics describing players’ pre-MLB play to be poor indicators of MLB potential. Instead, assessments of the five tools, together with scouts’ intuitive assessments of player physiology and other factors, have long held sway as the primary way to assess potential, one that shapes which players baseball clubs target and attempt to acquire.

Perhaps the most peculiar and striking indicator of the mixture of knowledge, ideology, and “superstition” underlying scouting assessments is the notion of “the good face” (Kerrane, 1999). Some scouts believe so deeply in their own intuitive ability to detect undeveloped potential that they have claimed they “could tell *by the structure of a young man’s face* not only his character but his future in pro ball” (Lewis, 2004, p. 7, emphasis added). In contrast to the good face, a variety of negative attributes, for example, a “bad body,” are used to devalue potential, also in largely intuitive ways (Kerrane, 1999; Lewis, 2003).<sup>5</sup>

Taken together, the need to assess potential early, the dominance of the scouting ranks by baseball insiders such as ex-players, and the influence of

a strong traditional ideology regarding player potential and value resulted in what Jim McGlaughin, an MLB scouting director in the 1970s, called scouting's "dearly held reliance on subjectivity and superstition" (Kerrane, 1999). Scouting largely determined who gained entry to the pool of young men considered candidates for MLB careers. Then, once a player gained entry to professional baseball through the minor leagues, some of the same heuristics held sway over the evaluation of players throughout their professional careers. The five tools and traditional statistical measures were thought by most to be the tried and true way to judge talent (Schuerholz & Guest, 2006).<sup>6</sup>

## SABERMETRICS

Many observers and commentators on what has become known as the "Moneyball phenomenon" – considered to include not only the A's' maneuvers but also those of teams that copied Oakland, such as the Toronto Blue Jays, the Tampa Bay Rays, and the Boston Red Sox – have viewed it more or less as the straightforward application of the statistical analysis tools of Sabermetrics to acquiring and deploying a team of baseball players (e.g., Hakes & Sauer, 2006; Schuerholz & Guest, 2006; Thaler & Sunstein, 2004; Wolfe, Wright, & Smart, 2006). Even Lewis's narrative is in large part a story in which "science" and "analysis" supplant myth with truth. Sabermetric analyses suggested that some skills – such as defense, base running, and hitting with power – were overrated in their contributions to winning games, and the A's' experiments showed that these skills were overpriced in the market for baseball players. In some analyses, Sabermetrics was seen to overcome heuristics and biases (Thaler & Sunstein, 2004), and in others it was seen to overcome market failures and to cause a better alignment between true player productivity and pay, as price theory predicts (Hakes & Sauer, 2006).

There are at least two problems with such facile interpretations. The first problem is that the application of Sabermetrics to the construction and management of a real baseball team was not straightforward. It required a great deal of fairly messy experimentation and the adaptation and extension of the cool analytic insights of statistical analysis in the hot context of emotional debates and politics around the accepted wisdom of baseball insiders. Second, most of the basic "truths" of Sabermetrics had been around for a long time and were well-known long before the Moneyball

saga began. The primary statistics (which focus largely on offensive output) to which fans and teams alike have paid the most attention have generated controversy since the late 1860s, when British cricket fan Henry Chadwick invented, defended, and proselytized them (Cramer, 1988; Tygiel, 2000). Table 3 provides examples and explanations of some traditional and Sabermetric measures of player offensive output, with comments on their differences.

Some of the improvements to baseball statistics suggested by Bill James, the godfather of Sabermetrics, and by others were available for more than two decades before the A's began experimenting with Sabermetrics. James's 1982 Baseball Abstract (James, 1982) was well known within the baseball community. By the early 1980s Sabermetric insights were well-enough accepted among baseball aficionados that in 1984 Pete Palmer was finally able to publish his statistically nuanced *The Hidden Game of Baseball* (Thorn et al., 1984). He had written the book in the 1960s, but little interest was generated until Sabermetric analysis was popularized by James's work (Lewis, 2004). Not only were these statistical truths there for the asking, entrepreneurs had even attempted to provide customized Sabermetric analyses to MLB teams and had been soundly rebuffed. In 1980, an organization called STATS Inc., founded by two Sabermetricians, began a five-year saga of trying to sell MLB teams on the idea of gathering and using better statistics and analyses. Although they had few takers, their activities ensured that Sabermetric insights were far from secret among MLB insiders.

It is also the case that there were other individuals at different teams with an interest in Sabermetrics, but none of them influenced the dominant industry recipe. Craig Wright of the Texas Rangers was the first front-office executive to hold the title of "Sabermetrician" in the 1980s ([www.baseballamerica.com](http://www.baseballamerica.com)), and Oakland's Paul DePodesta filled a similar position for the Cleveland Indians before Billy Beane hired him away. Indeed, John Henry, then owner of the Florida Marlins and more recently the owner of the Boston Red Sox, read Bill James's work and used Sabermetrics to compete with his *fantasy league* baseball team, but he apparently never even considered applying the same tools in managing the Marlins until after Oakland's success employing these techniques (Lewis, 2004).

Generally forgotten in most analyses of the *Moneyball* phenomenon is that the focus of Sabermetrics is on uncovering the patterns of activities and skills that lead to success at winning baseball games, not on providing tools to reshape how resource-constrained teams compete.<sup>7</sup> Its tools are at least as available and perhaps even more valuable to the already

**Table 3.** Some Traditional and Sabermetrics-Influenced Player Offensive Statistics: From Most to Least Traditional.

Statistic	Comments
<p>Batting Average (AVG<sup>a</sup>): Hits divided by at-bats. Note: for all calculations, at-bats is an adjusted number that ignores, for example, walks, “sacrifice” hits, and getting hit by a pitch.</p>	<p>Developed and promoted by Henry Chadwick in the late 19th century, it’s appropriateness was debated for several decades before it became the defacto standard measure of individual batting prowess (Thorn, Palmer, &amp; Reuther, 1984; Tygiel, 2000, p. 115). Since the 1970s has been demonstrated repeatedly to predict contribution to team offensive performance less well than OBS (below) or its components. It nevertheless is still the most likely statistic to be reported, and is still the basis for the MLB “Batting Champion” title.</p>
<p>Stolen Bases (SB<sup>b</sup>): A simple count of the number of bases a player has “stolen,” often divided by the number of times the player attempted to steal.</p>	<p>Traditionally, stealing bases is considered both valuable and exciting. In Sabermetrics, base stealing attempts are more likely to be discouraged because of analyses showing that they generally “cost” more in the likelihood of generating outs than the benefits they bring in terms of gaining a base (Thorn et al., 1984). A Sabermetric analysis of the entire 2004 season suggests that “no player in all of MLB added so much as a single win through base stealing alone” (Click, 2006, p. 115).</p>
<p>On-base percentage (OBP<sup>a</sup>): Number of times got on base through a hit, walk, or hit by pitch divided by times at-bat, walks, and sacrifice flies.</p>	<p>Forms of these measures were debated as early as the late 1800s (Tygiel, 2000), and were unsuccessfully promoted by baseball innovator Branch Rickey in the 1950s (Rickey, 1954; Schwartz, 2004). Versions were introduced as prime Sabermetrics measures by Bill James starting in the late 1970s. OBS is a superior measure, compared to batting average, of a player’s history of actually getting on base, and of keeping a team’s offense alive by avoiding an out. SLG measures power to generate extra-base hits, which AVG ignores (Keri, 2006c).</p>
<p>Slugging percentage (SLG<sup>a</sup>): Like batting average, but rather than adding “1” in the numerator for any hit, scores “2” for a double, “3” for a triple, and “4” for a homerun; thus, the weighted sum of these hits divided by plate appearances excluding walks and hit-by-pitch.</p>	

**Table 3. (Continued)**

Statistic	Comments
On-base plus slugging (OBS): OBP + SLG. (Note that this involves adding together two numbers calculated with different denominators).	Developed by Sabermetricians Pete Palmer and Dick Cramer (Thorn et al., 1984). OPS “combines” the advantages relative to AVG of both OBP and SLG (Hample, 2007). Because of Sabermetric analyses OBP is often overweighted relative to SLG in the formula. Paul Podesta drastically increased this weighting due to a belief in the critical value of not making an out, which OBP measures more directly than does SLG (Lewis, 2004).
Equivalent Average (EqA): Complex calculations combining a large number of factors that affect a player’s offensive output.	Nominally similar to AVG, but makes adjustments for the characteristics of the park and the league in which a player plays, the player’s baserunning and the quality of pitching faced (Keri, 2006c). Creates greater comparability between players who work in different contexts.
Value Over Replacement Player (VORP): Complex calculation.	Estimates the number of runs a player generates over the number of runs a player in the same position just barely good enough to be playing in the major leagues would generate (Keri, 2006c).

<sup>a</sup>An official Major League Baseball statistic as of 2007.

resource-advantaged teams, as later adoption of Sabermetrics by rich teams such as the Red Sox would demonstrate. What needs explanation is not how the application of Sabermetrics improves the matching of player price and productivity; rather, what requires explication is how, after years of industry blindness and resistance to Sabermetric principles, the A’s challenged the firmly institutionalized baseball recipe in a manner that changed the recipe in fundamental ways. The newly important theoretical “truths” had been out there for a long time. What did it take for the Oakland A’s to make them real? Our analysis suggests that the *Moneyball* phenomenon can be better understood as driven by bricolage than as a straightforward application of statistical analysis to generate arbitrage benefits in inefficient markets.

## BRICOLAGE AND THE INDUSTRY RECIPE

Baker and Nelson's (2005) survey of the development of bricolage across many fields identified three primary aspects: making do, relying on the resources at hand, and combining resources to meet new challenges. In this section, we examine the A's' initial responses to their new resource constraints against these core aspects of bricolage and suggest that their behavior closely fit the general pattern of bricolage.

### *Making Do*

Baker and Nelson (2005) characterized "making do" in terms of a bias for action and the refusal to enact accepted limitations regarding what is considered a resource. Both of these criteria are reflected time and again in Oakland's behavior.

### *Bias for Action*

As highlighted by Lewis (2004), the A's management, led by Billy Beane, was both willing and apparently eager to make substantial changes to the team on the fly. For example, they structured major moves around opportunities that occurred near mid-season trading deadlines, frequently jettisoning current players for new ones even if they only expected the new players to stay with the A's for the remainder of that season. Indeed, one of Billy Beane's rules was, "No matter how successful you are, change is always good. There can never be a status quo. When you have no money, you can't afford long-term solutions, only short-term ones. You have to always be upgrading" (Lewis, 2004, p. 193).

The A's bias for action encompassed a willingness to engage in near-constant experimentation. Such tinkering is consistent with other studies of bricolage, which suggests that because solutions rendered through bricolage are usually imperfect, they tend to be temporary (Ciborra, 1996; Ciborra & Lanzara, 1990).<sup>8</sup> Dorado (2006) also suggested that bricolage is always a "work in progress." Oakland's experimentation and active testing of "institutionalized definitions of orthodox practice" (Baker & Nelson, 2005, p. 335) frequently uncovered useful insights unforeseen by outside analysts.

For example, Beane moved players into positions for which they had no prior experience. Although an excellent hitter, catcher Mark Hatteberg sustained an injury that inhibited his ability to make the essential throw

from home to second base, effectively ending his career as a catcher. However, recognizing that Hatteberg could still be a useful addition to his team, Beane salvaged Hatteberg's career by reassigning him to play first base (Lewis, 2004, pp. 162–187). Hatteberg had never played first base before, but he learned to do so by practicing with his wife on rain-soaked tennis courts near their Seattle home during the off season. Hatteberg became a competent first baseman and his hitting prowess continued to improve. In 2007, the 37-year-old provided the Cincinnati Reds with the best offensive performance of his career, generating an On Base Plus Slugging (see Table 3 for definitions) percentage of .868 (vs. a career average .776) and a batting average of .310 (vs. a career average of .274).

Another experiment involved the acquisition of aging slugger David Justice, who, like Hatteberg, “most teams didn’t want to have anything to do with” (Lewis, 2004, p. 142). Beane’s assistant Paul DePodesta described the move this way: “He’s an experiment for us ... What we want to see is: at an age of physical decline does the skill maintain its level, even when a player no longer has the physical ability to exploit it?” (1993, p. 150).

This bias for action and willingness to experiment was in stark contrast to the passivity of many MLB teams facing resource disadvantages. As Lewis (2004, p. 124) describes it, MLB teams in disadvantaged financial positions frequently “abandon all hope of winning,” and simply excuse themselves as engaging in a lengthy process of “rebuilding,” a process which seldom works as intended. Statistical analyst Keri (2006b, p. 312), analyzing the ineffectiveness of long-term planning in baseball, argued, “Having the flexibility to adjust to opportunities ... tends to work better than X-year plans, no matter what number X represents.” It is important to note that the bias for action cannot be directly inferred from Sabermetric analysis. Statistical analysis suggested what skills and player behaviors might contribute to winning games, but it could not suggest how a resource-constrained team might try to assemble or deploy these skills and behaviors, or even why it should not give up and claim to be rebuilding.

### *Refusal to Enact Resource Limitations*

The MLB industry recipe defines what is valued as a player resource and, as importantly, *what is not*. Statistical analysts challenged the recipe for two decades, but their work had little effect on MLB despite the fact that it was widely available. Clearly, Sabermetric “insights” were viewed as little more than curiosities; academic novelties whose conclusions looked nice on paper but were irrelevant for assessing real men engaged in the heat of combat. How a player was to be assessed (and why) was already thoroughly

understood and little could be done to alter the fundamental economics of the game.

It was the A's' refusal to enact the limitations defined by the deeply institutionalized baseball recipe that began to change the recipe. Although Beane, Paul DePodesta, and Sandy Alderson were loosely guided by statistical insights, it was their willingness to use the statistical insights creatively and in unconventional ways that allowed the A's to find value where other teams saw none. The theme of refusing to enact resource limitations suffuses the A's narrative more than any other idea. Alderson framed the situation this way, "We suddenly were put into the position of: we can only afford a one-tool player. Which tool is it going to be?" (Lewis, 2004, p. 58). During the period through 2002, the A's' answer was, in oversimplified terms, to emphasize tools that got players on base and deemphasize tools that seemed to contribute less directly to winning and were overpriced, including running, fielding, and hitting with power. Subsequently, when others began to mimic the A's approach, the answer would change.

To other teams looking for players with more balance across the "five tools," and indeed even to the A's own scouting staff, most players that were attractive to Beane and DePodesta simply did not appear to be worth employing. Bill James encapsulated the opportunities squandered by failure to move beyond enacted resource limitations and the potential in what was at hand to MLB teams at little cost when he described the situation of Ken Phelps, a player he believed was inappropriately languishing in the minor leagues: "Ken Phelps are just *available*; if you want one, all you have to do is ask. They are players whose real limitations are exaggerated by baseball insiders, players who get stuck with a label, the label of the things they *can't* do – while those that they can do are overlooked" (Gray, 2006, p. 189).

Players the A's targeted lacked most of the tools, the "good face" and the "body you could dream on." For example, while Beane and DePodesta coveted Kevin Youkilis ("a fat third baseman who couldn't run, throw or field" (Lewis, 2004, p. 19)) because of his ability to draw walks (a way of getting on base not included in the five tools), the scouts resisted even going to see him. To scouts who scorned players with faces or bodies deemed inappropriate for baseball, Beane would sometimes retort, "we're not selling jeans here" (Lewis, 2004, p. 34). The continued enactment of resource limitations by other MLB teams and their scouts allowed the A's to accumulate a group of undervalued players with useful skills. Other teams didn't want Scott Hatteberg with his crippling injury or the aged David Justice. Indeed, Jeremy Brown, a college player from Alabama who held most

of the collegiate Southeastern Conference hitting records, was mocked by one of the A's scouts for his weight: "when he walks, his thighs stick together" and "if you put him in corduroys, he'd start a fire" (Lewis, 2004, p. 34).

But for the A's, the refusal to enact these limitations created opportunity. As DePodesta put it, "We don't get the guys who are perfect ... there has to be something wrong with them for them to get to us ... What gets me really excited about a guy is when he has warts, and everyone knows he has warts, and the warts just don't matter" (Lewis, 2004, pp. 142–149).<sup>9</sup> Indeed, another apparent characteristic of the standard industry recipe – that traits which did not fit the preconceived mold were ridiculed – made it easier for Beane to operate; because others did not want to be the subject of ridicule themselves, he could cheaply pluck players others were afraid to pick.

Following this approach, by 2002 the A's had the best pitching staff in the American League, "yet of all their pitchers only Mark Mulder, one of the team's three brilliant starters, had failed to inspire serious doubts at some point in his career in the baseball scouting mind" (Lewis, 2004, p. 221). By refusing to enact taken for granted limitations regarding what constitutes a resource – limitations completely natural and taken for granted by other teams – the A's were able to assemble a winning team on a shoestring budget; as Keri noted (2006b, p. 211) "Beane grabbed freely available talent for next to nothing, gaining solid production from scrap-heap survivors."

#### *A Certain Contrarian Impulse*

Lewis claims that Billy Beane was particularly well-positioned to challenge accepted truths in baseball because Beane's personal experience as a player made him simultaneously an insider and an outside critic. From his days in high school, scouts had celebrated Beane's prowess and carried forward the assumption that he was destined to be a star. Indeed, so clearly was he marked by *the face*, "*a body you could dream on*," and *all five tools* that managers and scouts appeared to have difficulty even noticing that as he moved through the ranks of professional baseball he simply didn't play very well. Beane struggled in and out of MLB right up until the day that he voluntarily quit the game, and in a previously unheard of move, *asked* to be demoted from player to scout. In Lewis's rendering, the A's' challenge to how scouts and baseball insiders think about the game was driven in part by Beane's need to understand and come to terms with what had happened to him and how he had failed despite all his outward predictors of potential and success.

Perhaps for these reasons, Beane, with DePodesta's help and Alderson's support, seemed to take particular pleasure in publicly flying in the face of

all that baseball holds sacred. Other research has described a similar pattern of behavior among bricoleurs, who appeared to be motivated in part by their disdain for competitors who were immobilized unless they were able to acquire exactly the right resources for every task. Bricoleurs appeared to be saying to their competitors, in effect, “see what I can do!” and their desire to maintain this posture fed into a strong bias for action and willingness to compete under tight resource constraints (Baker & Nelson, 2003).

Beane, too, appeared to relish his contrarian role. Rather than trying to hide what he was doing, an approach that might have allowed him to take advantage of others’ biases a little bit longer, Beane aimed to make trades that caught everyone’s attention, what he called, “a Fucking A trade ... one that causes everyone else in the business to say ‘Fucking A’” (Lewis, 2004, p. 179). During the 2002 draft, when the A’s had a large number of valuable early-round draft picks, they used these picks to acquire players whom they could probably have acquired with much lower and less valuable picks in later rounds because other teams did not share Oakland’s assessment of these players’ value. It appears Beane may have “squandered” an advantage simply to make a point along the lines of “see what I can do!” To us, this suggests the likelihood that – particularly under resource-disadvantaged conditions – bricolage may often be driven by a contrarian impulse that creates a bias for action and refusal to enact resource limitations, but which in competitive circumstances also makes effective copying of the innovation more likely because its practitioners revel in the visibility of their unconventional actions.

### *Relying on the Resources at Hand*

Prior studies of bricolage have included among the resources at hand both those already under the control of an organization and those available cheaply or for free relative to standard resources (Baker & Nelson, 2005; Garud & Karnoe, 2003; Levi-Strauss, 1967). Because of the structure and rules of MLB, the A’s drew primarily from two pools of resources. First, as described above, the A’s cheaply<sup>10</sup> accumulated players for whom they were able to see potential beyond their “warts.” Second, because of antitrust exemptions and the rules of free agency, the Oakland A’s organization was able to employ drafted players in the minor leagues for up to seven years at low wages and *without the threat of salary competition from other teams*. Even more importantly, if a player was moved to the major league team, the A’s could pay the player the league minimum salary (10–15% of league

average wages) for three years before the player could file for salary arbitration and low wages for six years before the player became a “free agent” able to enter the open market for bidding by other teams (Carfagna et al., 2006; <http://mlbplayers.mlb.com/pa/info/faq.jsp>). During this time, even if a player demonstrated the superior potential the A’s had envisioned and became more broadly recognized as valuable, the player remained available to the A’s at a much lower price than bidding would have established absent the MLB’s antitrust exemption.

Because of the structure of free agency in MLB, the ability to see potential invisible to other teams created benefits that remained available for a long time. For example, the A’s drafted one of the best pitchers in baseball, Barry Zito, in 1999 and were able to pay him a *total* of \$940,000 during the three years ending in 2002, during which time his value on the open market would have been in excess of \$10 million per year (Lewis, 2004, p. 22). Further, even when they lost their young stars to free agency – an outcome often seen as devastating to other teams – the A’s were able to treat these losses as an opportunity for resource acquisition because they would then receive a “compensating” pick in the next year’s draft from the team who acquired their player (<http://mlb.mlb.com/mlb/events/draft/y2007/index.jsp?content=order>). Many teams faced with losing a star to free agency attempt to retain that player by offering him a big increase in salary. The A’s, who did not have the resources to compete in the free agent market, either simply let these players become free agents or traded them. Thus, while they “lost” players as they became expensive-to-retain stars, they were able to garner multiple first and second round picks in the next year’s draft that they used to refill their pipelines with future talent which they could utilize more inexpensively and for a longer period of time than the players they lost.

### *Combining Resources*

Penrose (1959) argued that it is not resources themselves, but managerial talent that creates new opportunities for organizations by identifying and combining resources in idiosyncratic ways that generate valuable heterogeneity across organizations. A primary driver of the A’s ability to rely on the resources at hand was their ability to rethink how player skills might be combined and deployed. As noted above, because they could afford to keep very few players once they became eligible for free agency, the A’s *expected* to lose their stars. How they dealt with the impending change made such losses less damaging to team performance.

At the same time the A's lost first baseman Jason Giambi to the richest team in baseball, the New York Yankees, they also lost outfielder Johnny Damon to the second richest team, the Boston Red Sox, and they simultaneously needed to replace their designated hitter. While such losses might result in declaring the need for a "rebuilding" year for most resource-constrained teams, Billy Beane instead noted, "The important thing is not to recreate the individual ... The important thing is to recreate the *aggregate*" (Lewis, 2004, p. 141). The answer? The A's acquired the two inexpensive "has-beens" we discussed above – David Justice and Scott Hatteberg – and added a third unproven player with a troubled personal history who was also therefore inexpensive – Jason Giambi's younger brother, Jeremy. Thus the A's responded to the loss of their stars to richer teams by replacing them with three players who collectively had about the same on-base percentage (the element of performance that the A's were most intent on maintaining) and who could play the three positions that had been vacated (once Hatteberg retrained himself to play first base).

Although these changes resulted in some loss of defensive skills, Sabermetric analysis suggested that the foregone defensive capabilities added less value than baseball insiders commonly assumed and that it could be compensated for by the expected increase in offensive productivity (Gray, 2006; Lewis, 2004). In other words, while the runs allowed per game might go up marginally, the runs scored per game would be maintained at low cost. Thus, by focusing on the possibilities inherent in combinations of resources available cheaply rather than the particular skills instantiated in individual players, and by being willing to accept a serviceable although imperfect solution, the A's managerial talent identified and created *idiosyncratic combinations of resources that provided services from inexpensive players that were a reasonable replacement for the almost inevitable loss of expensive stars.*

### *From the A's to MLB: Changing the Recipe*

As a consequence of their success, the A's bricolage brought Sabermetrics into the core of MLB. The first legitimating effect of the A's successful bricolage and "in your face" attitude was that other teams noticed what the A's were doing and began trying to do the same thing (Pollock & Rindova, 2003; Scott, 2001; Suchman, 1995). Other resource-disadvantaged teams hired analysts steeped in Sabermetric approaches and took their prescriptions seriously. Several of Beane's colleagues were hired away to become the

general managers of other teams. For example, J.P. Ricciardi, former Director of Player Personnel with the A's, became the general manager of the Toronto Blue Jays in 2001.

In addition, some resource-*advantaged* teams recognized that Sabermetric approaches were not only advantageous to resource-constrained teams. Consequently, Paul DePodesta, Beane's top aide, was hired as the GM of the Los Angeles Dodgers in 2004. Further, at one point the Red Sox had actually reached an agreement to hire Billy Beane himself, although Beane quickly decided to renege on the contract and stay with Oakland. Instead, John Henry, the erstwhile fantasy baseball sabermetrician and new owner of the Red Sox, hired Bill James as an analyst and advisor and Theo Epstein, a baseball outsider and Sabermetrics aficionado, as the youngest general manager in the history of baseball. Sabermetrics was further legitimized in 2004, when the Boston Red Sox, with a team designed using Sabermetric principles, were finally able to win the World Series for the first time in 86 years (Goldman, 2005; Mnookin, 2006). The current general manager of a competing team indicated to us in an interview that common parlance in MLB now identifies teams' strategies as falling along a range from traditional scouting-dominated to heavy reliance on Sabermetric statistics. The incorporation of Sabermetric insights into MLB no longer relies on bricolage, but is instead being institutionalized as a commonplace and accepted routine in baseball's industry recipe.

Still, not every team has adopted the new Sabermetrics gospel; indeed, even as Sabermetrics and *Moneyball* have become a part of everyday baseball parlance, some serious baseball thinkers have rejected many of its tenets. For example, the Atlanta Braves, whose extraordinarily successful general manager John Schuerholtz moved up to President of the team in October 2007, continue to follow an approach that is explicitly "anti-moneyball" (Schuerholz & Guest, 2006; Shanks, 2005). Further, the debate over the relative value of scouting versus statistical analyses continues unabated (Perry, 2006).

Overall, however, Sabermetrics has flourished. As we noted above, a primary effect of many teams chasing the sorts of players that the A's showed could be accumulated cheaply and deployed effectively has been to increase the price of those sorts of players to something more closely aligned with their newly recognized productivity (Hakes & Sauer, 2006). Sabermetrics has also flourished as an analytic activity. Although the insights of Bill James, Voros McCracken, and others have been rendered private as these analysts have become MLB team employees, other analysts, such as those associated with Baseball Prospectus, Inc., continue to make prodigious

strides in improving the statistical analysis and objective understanding of patterns of performance in baseball (Keri, 2006a).

Despite the impressive scholarship of such analyses, because Sabermetrics has become a legitimate tool of MLB (and has even spread to other sports), it may now be much more difficult for any team to create advantages through application of these insights alone. Indeed, the powerful statistical tools that have been developed are increasingly directed at answering questions that are interesting for aficionados but relatively trivial for managing a team; for example, what would happen to team performance if you combined the complementary physical attributes of two specific players – for example if the fastest runner in the league was also the best hitter? (Keri, 2006a). The initial space for competitive maneuvering that the A's created through bricolage has thus largely been closed (Isidore, 2006).

### *Beyond Sabermetrics: Bricolage and the Resource-Disadvantaged*

Sabermetrics is increasingly part of the baseball recipe; bricolage is not. An important question, therefore, is what did the A's do once the rest of the league adapted to their competitive maneuvering? We lack the detailed sorts of detailed insider reporting that Lewis (2004) and others provided on the A's earlier activities, but watching Beane and the A's is now almost a spectator sport in itself, and the available evidence suggests that, as much of the rest of the league adopted Sabermetrics, the A's continued engaging in bricolage even while they veered away from Sabermetric insights. As the Yankee's General Manager Brian Cashman (reported in Heyman, 2006) noted, "Billy Beane is a very bright individual who knows there are many different ways to skin a cat and find a way to be successful ... Every year he comes up with a different game plan and finds a new way to win. He's no one-trick pony."

Oakland continued to maneuver and experiment with new ways of deciding which players they want and how to use them. Perhaps the most surprising change was the A's increased emphasis on defense (Wilson, 2006). As noted above, one of the core tenets of the A's earlier approach was the idea that defensive inadequacies were best dealt with not by shoring up the team's defense, but by further improving its offense (Lewis, 2004). Indeed, despite their regular season successes, one of the continued knocks against the A's was that they were unable to make it past the first round of the playoffs. Beane himself was famously quoted by Lewis as noting "my shit doesn't work in the playoffs" (Lewis, 2004, p. 275). An analysis exploring

this issue (Silver & Perry, 2006) concluded that Oakland's failure to advance in the playoffs was due to their weaknesses in pitching and defense.

Similarly, one of the key statistical points around which the A's earlier behavior pivoted was rejection of the scouting norm of placing high value on the potential of high school players, because of the difficulty in predicting MLB performance from high school performance and James's Sabermetric demonstrations of the high risk that high school stars will not make it to the major leagues. Early on, Beane and DePodesta caused the A's to focus their draft choices on more developed college players and to treat statistical measures of their college play as useful predictors of MLB potential. However, as other teams began following that pattern the A's began pursuing high school players other teams left available (Heyman, 2006). What was undervalued changed, and the direction of the A's bricolage changed as well. This approach resulted in continued success for the A's, culminating in their making it to the 2006 American League Championship Series for the first time since 1992, where they were swept by the Detroit Tigers.

In the first five years following this "golden era," the A's were unable to duplicate their success. While none of their seasons have been terrible, their average won-loss record hovered under 50% (.471) and they continually failed to make the playoffs (see Table 2). Nevertheless, with a retooled approach and a shift in focus, the A's returned to the playoffs in 2012 following a furious September charge in which they caught the Texas Rangers just in time to return to postseason play.

The fortunes of Beane's protégés and Sabermetric analytic experts, J.P. Ricciardi and Paul DePodesta, offer further evidence that it was messy bricolage, and not Sabermetrics per se, that led to Oakland's success. Ricciardi never achieved the same degree of middle market success with the Toronto Blue Jays that Beane displayed with the A's. Between 2002 and 2007, Ricciardi's team finished third or lower in the AL East Division five out of six years. It should be noted that the Blue Jays are competing in the same division as the Yankees and the Red Sox – a challenge that the A's did not have to directly face.

Paul DePodesta was hired to become the GM for the Los Angeles Dodgers, but his career as a GM was short-lived. After a promising start in 2004, when the Dodgers won the NL West Division, he was fired by the Dodgers at the end of the 2005 season for making what were perceived to be a number of disastrous trades during the 2004–2005 off-season, trades that were blamed for the Dodgers' second-worst single season record in club history ([http://en.wikipedia.org/wiki/Los\\_Angeles\\_Dodgers](http://en.wikipedia.org/wiki/Los_Angeles_Dodgers)). After a brief

period of unemployment, DePodesta was hired in 2006 as special assistant for baseball operations by the San Diego Padres. Thus, despite their involvement in the early, successful applications of Sabermetrics, neither Ricciardi nor DePodesta were able to replicate their original success.

## DISCUSSION

### *How do Resource-Disadvantaged Entrepreneurs Compete?*

In terms of the primary questions that motivated this chapter, our study demonstrates that by engaging in bricolage, resource-disadvantaged participants *can* make room for competitive maneuvering even when they are constrained to compete at the core of a highly institutionalized field. Explaining the dynamics of such competition is essential to understanding the processes through which entrepreneurs, whether at the helm of new organizations or existing ones they seek to transform, can find ways to compete against richer and entrenched competitors. Unlike much work on so-called institutional entrepreneurship, our study shows that resource-constrained entrepreneurs needn't create substantial changes to regulatory and normative institutions in order to create a space in which to compete. Instead, successful challenges to cognitive institutions, through bricolage or some other process can be enough to allow resource-constrained entrepreneurs to compete even in highly structured and institutionalized industries dominated by wealthy firms.

We showed that MLB is a highly institutionalized field, and that when the new ownership of the A's created a resource-disadvantaged situation, the leadership of the A's adopted a pattern of behavior that rejected the bonds of the existing industry recipe and closely matched prior descriptions of bricolage. Refusing to hide passively behind excuses about financial determinism and "rebuilding," or to enact taken-for-granted resource limitations, the A's were able to compete effectively against teams with far more money to spend.

Our answer to the question of how such a resource-disadvantaged competitor can continue to maneuver for advantage when its innovations result in adaptive responses by competitors is more tentative. The evidence suggests that the A's are continuing to engage in bricolage, rejecting some of the earlier findings of Sabermetrics while many other MLB teams are actively following its tenets. The A's continued to perform well for a time with a team possessing substantial differences from those that Beane and DePodesta built

earlier, but have struggled in more recent years. Future research should continue to explore the sustainability of bricolage as a way to maneuver for advantage in highly institutionalized competitive environments.

### *The Nature of Organizational Resources*

The answer to the second major question motivating our study (what could be learned about the nature of resources from the creative maneuverings of bricoleurs?) supports the line of research extending from Penrose (1959), that the distinctive, advantage-generating characteristics of resources are based on the capabilities of managers to combine and deploy them in idiosyncratic ways (Baker & Nelson, 2005; Mishina, Pollock, & Porac, 2004). It also supports the Weickian notion that resource limitations are enacted and the claim that bricolage includes a bias for testing taken-for-granted limitations (Baker & Nelson, 2005; Weick, 1979). In a mature institutionalized field, it is “natural” (Berger & Luckmann, 1967; Schutz, 1944) to assume that the industry recipe describes the correct use and appropriate valuation of useful resources. This was the case with baseball’s valuation and devaluation of player attributes and it helps to explain why Sabermetric insights could exist for so long in parallel to the routine behavior and decision making of MLB teams, without causing substantial changes to the baseball recipe.

Our study dispels the notion that consistent adherence to Sabermetrics is at the core of the A’s continued success, and shows instead that Sabermetrics is now a part of the industry recipe that defines the context in which the A’s now maneuver for advantage through bricolage. Our study supports the Penrosian argument that, to a large extent, resources are what organizations make of them. This argument provides some comfort for the majority of entrepreneurial firms who strive to persist and flourish despite severe resource deficits relative to larger, more established competitors. Firms that can achieve consistently superior financial results, that can dominate their competitors, and that can sustain resource and competitive superiority are rare indeed. Yet, our study suggests that even under the most limited of circumstance, firms can and do find ways to be resourceful and achieve viability and relative success. It also helps to explain why trying to compete on the same basis as richer competitors is oftentimes a mistake for the typical resource constrained start-up, and suggests that the willingness and ability to engage in bricolage may be an effective entrepreneurial strategy for using limited resources, even in mainstream and highly institutionalized industries.

*Contributions to Institutional Theory Research*

Our study contributes to the stream of research in institutional theory that seeks to explain sources of institutional change. As we went to some lengths to demonstrate, MLB is extraordinarily institutionalized, with a mature industry recipe and patterns of recruitment and socialization that contribute to a high degree of stability. MLB teams are constrained to compete within a rigid and stable set of rules guiding competition on the field, while laws, court rulings, regulatory procedures, and even public opinion guide many of the behaviors off the field. Prior institutional research would suggest that under these circumstances, resource-disadvantaged organizations are unlikely to be able to create space for effective competitive maneuvering and even more unlikely to create innovations that generate institutional change.

In contrast, our study extends institutional theory's grasp of endogenous change by focusing specifically on the cognitive institutions susceptible to change and by describing a mechanism through which such innovations may occur. The fact that Sabermetric truths lay underutilized for so many years throws into stark relief the limitations of simple knowledge or discovery as a means for resource-poor firms to maneuver competitively at the core of institutionalized fields, and reinforces the primacy of stability and constraint in highly institutionalized fields. Sabermetrics was not employed to undermine the MLB recipe until a set of bricoleurs wielded it to support their belief that they need not accept their own apparent limitations. Still, it was but one tool among many used by the A's to challenge the taken-for-granted practices and constraints of MLB. The bricolage we have described was not easy, obvious, or simple to sustain.

An important advantage of our study is that it takes place in a context in which institutional maturity and the nature of the field leaves no "periphery" to which resource-constrained organizations can move; every team plays a similar schedule against the same sets of competitors. There is no movement to another, more open field (Kraatz & Zajac, 1996); MLB teams have no other league to which they can move. The legal environment and the rules of the game are extremely resilient and slow to change. Thus, resource-disadvantaged teams can maneuver mainly through bricolage – through finding ways to test enacted limitations and to combine the resources at hand in novel ways. Indeed, the A's bricolage challenged the cognitive elements MLBs institutions, leaving the regulatory and normative pillars largely unchanged. The A's were *not* engaged in institutional entrepreneurship, but were simply trying to win more games. Ironically, by demonstrating that a resource-constrained team could maneuver for

advantage, the A's may have reduced the pressure on MLB to make the top-down regulatory changes necessary to make baseball less unfair. The success of other small market teams in recent years, such as the Tampa Bay Rays, Minnesota Twins, and Milwaukee Brewers also likely reduce the pressures to enact significant normative or regulatory changes.

The context of our study allowed us to closely examine an important example of bricolage in MLB, but it does not allow us to address endogenous institutional change in fields where participants face different sets of constraints on their competitive maneuvers. An important question for future research involves trying to understand more generally the effects of highly institutionalized environments on how resources are valued and combined. For example, prior to the changes wrought by the A's, the institutionalization of baseball and its powerful recipe clearly formed an effective barrier against new ideas and approaches. On the other hand, by retarding incremental changes to how players were valued and combined, this same institutionalization created a substantial opportunity for an organization to compete through bricolage. Future studies should examine the interplay between institutionalization as a drag on change and the slowness of change as a source of opportunity for effective competition through bricolage.

## CONCLUSION

As numerous analysts (e.g., Hakes & Sauer, 2006; Lewis, 2004) have noted, MLB is extraordinarily information rich and highly competitive. The A's creation of valuable resources from combinations of players available at low cost and the subsequent revaluation of player skills across MLB suggest that other economically and culturally important fields may present substantial opportunities for competing through skillful bricolage. And even in mature and deeply institutionalized organizational fields, bricolage may be an important engine of endogenous change for firms of any age or size.

## NOTES

1. Derived from the Society for American Baseball Research, "Sabermetrics" refers to a set of statistics aimed at providing more valid measures of contributions to run scoring and run prevention than prior, simple statistics.

2. Arguably, the use of Sabermetrics allowed the A's to obtain better players at lower costs or better selections of players in annual drafts than other teams were obtaining. It also gave them advantages in trades and in retaining high draft choices. Even though their focus was initially on hitting, the advantages spilled over into pitching in that they had better draft picks than other clubs. This is not to say that they did anything special in the years of 2003 and 2006, but simply that their better overall performance across several years placed them higher in the standings. In 2003 and 2006 this better performance resulted in playoff appearances.

3. Even executives of small market baseball teams with extremely limited resources are continually barraged by pleas to "play the game" as do large market teams, regardless of the success of the team or the ability of the teams to take this path. For example, Jim Souhan, the primary baseball reporter for the *Star Tribune* in Minneapolis, criticized the Twins' management for not behaving like the Yankees, Red Sox, Angels, and Cubs in an article published on October 3, 2007, the day the 2007 playoffs commenced. The tagline read, "The Twins often get applauded for their low budget successes, but some of the big spenders are playing October ball this year." Yet the Twins had been in the playoffs five of the previous six years. Terry Ryan, the Twins' general manager, resigned that August despite his success in the face of overwhelming disadvantages.

4. This is one reason steroid use poses a huge conundrum, because it muddies fans' abilities to make comparisons, for example, of the performance of Babe Ruth in the 1920s and 1930s with that of Barry Bonds in the 1990s and 2000s.

5. The belief in the ability of scouts to "know" talent intuitively or by how a player looks goes back at least 100 years. Leigh Montville, in his biography of Babe Ruth, reported the legend of the scout Jack Dunn who signed Ruth out of a Baltimore area orphanage: "[Jack Dunn] would check out the player the way a trainer or potential buyer might look at a young Thoroughbred horse. If he liked the player's size, the way the player moved just walking across a room, he might make an offer. Dunn sometimes never even saw the player play a game" (Montville, 2006, p. 33).

6. The core batting statistics by which offensive performance had been traditionally judged include the three numbers that comprise the elements of the "triple crown": home runs, runs batted-in, and batting average. These simple measures have been somewhat supplanted in the post-Sabermetric era by more complex metrics such as "on-base-plus slugging" (OPS) and "wins above replacement" (WAR).

7. Perhaps because of the longer history of and greater availability of hitting statistics, Bill James' earliest work was on analyzing statistics aimed at uncovering contributions to the number of runs a team scored over the course of a season. It was these insights that Beane's brain trust focused on in gaining competitive advantage in hitter evaluation. However, this advantage also allowed the A's to achieve superior pitching selections, because they were able to delay picking undervalued hitters in draft competitions, using earlier picks for promising pitchers, and they were able to gain more draft selections by trading overvalued hitters. In essence, their valuation advantage enabled run-scoring parity at a much lower cost and it enabled opportunities to acquire superior young pitching.

8. We might add that because in MLB all such strategic moves are fully transparent, even strategies that are nearly "perfect" can be quickly imitated and are also rendered temporary.

9. As is discussed in the next section, Billy Beane's personal experiences and cognitive disposition play an important role in this story; however, the infusing of these bricolage-type cognitions and attitudes into the mindset and behaviors of the entire organization was necessary to make them work.

10. There are two main costs to acquiring an MLB player: compensation to the player's prior team and subsequent salary costs. In theory, a player can be just about "free" because prior teams trying to unload players sometimes subsidize their salaries with new teams. For the most part, though, the players we refer to in this study were relatively inexpensive but not free; henceforth we will use the words "cheap" or "cheaply."

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