College as a Club: A Theory of Governance in Information Transactions

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Abstract: Why do universities offer room and board? Is the market not capable of providing food and housing, among other amenities, more efficiently than the university can? One logical answer can be found by viewing universities as clubs that govern information transactions. Because education is a subset of the market for information, it necessarily faces the problems of information asymmetry. These problems include hold-up, post-contractual opportunism, and free riding—any of which can lead to market breakdown. Information is a hot commodity, however, so entrepreneurs do find creative ways to govern the transactions and allow markets to clear. An illuminating case is provided by the evolutionary rise of integrated colleges in medieval Europe's first non-integrated universities. These colleges were transaction-governing clubs using in-house amenities to help manage the club and distribute club goods while mitigating the problems of information asymmetry. This college-as-a-club theory can also be extended to today's universities and explain variation in the array of in-house amenities.

Keywords: Clubs, Higher Education, Information Asymmetry, Medieval Colleges

JEL Codes: I21, D71, D82, N33

"If explanation of past results rather than prediction is the task, the economist can diagnose the particular attributes which were critical in facilitating survival, even though individual participants were not aware of them."

——Armen Alchian (1950)

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1. The Second Signal

Why do universities offer room and board? Is the market not capable of providing food and housing, among other amenities, more efficiently than the university can? One logical answer can be found by viewing universities as clubs that govern information transactions. Because education is a subset of the market for information, it necessarily faces the problems of information asymmetry. These problems include hold-up, post-contractual opportunism, and free riding, any of which can lead to market breakdown. Information is a hot commodity, however, so entrepreneurs do find creative ways to govern the transactions and allow markets to clear.

An illuminating case is provided by the evolutionary rise of integrated colleges in medieval Europe's first non-integrated universities. In the 12th and early 13th centuries, all university transactions happened independently on the market.[2] Students would directly pay professors for lectures, landlords for housing, and vendors for food, while the professors would teach outside, in a rented hall, or at their residences. Colleges, which were originally just lodging organizations in a university town, eventually brought the classroom entirely under their control by the 16th century (Rashdall 1936). So instead of "Why do education providers offer housing?" the question is rather "Why do housing providers offer education?" I argue that these colleges were economic clubs using in-house amenities to help manage the club and distribute club goods while mitigating the problems of information asymmetry.

This paper contributes primarily to two literatures: club theory and the economics of university higher education.[3] I unite these literatures while also drawing from the literature in

[2] There were seven of these non-integrated universities: Paris, Bologna, Montpellier, Padua, Orleans, Oxford, and Cambridge (Cobban 1988, 3).

[3] Club theory originated in Tiebout (1956), was formalized in Buchanan (1965), and is summarized in Sandler and Tschirhart (1980; 1997). Specifically, I am building on Iannaccone (1992) and Carvalho (2020) in a branch of club theory addressing sacrifice and sorting. The economics of university higher education has its roots in Smith (1776) and is summarized in Volume 13 of *Journal of Economic Perspectives* "Symposium: The Economics of Higher Education" (1999) and Raines and Leathers (2003).

information economics.[4] Universities engage in many non-academic ventures that other theorists either leave unexplained or attribute to base, greedy, or power-hungry administration.[5] My college-as-a-club theory gives an economic explanation.

I begin in Section 2 with a pure type of the student-teacher transaction to distill the problems of information asymmetry, and in Section 3, I present three ways that entrepreneurs overcome these problems—one of which is by using clubs. In Section 4, I log historical evidence of these problems in the first medieval universities. Then in Section 5, I outline the evolution of integrated club-like colleges in the non-integrated universities and argue their position as transaction-governing institutions. Finally, I offer present-day implications in Section 6 and conclude in Section 7.

2. The Student-Teacher Transaction, a Pure Type

Information is a special kind of economic good which invites complications for its exchange. To expose these complications, I present an exchange scenario where the only defining characteristic is that information itself is the good.

2.1 *The Investigation Game*

Suppose there is a single buyer, Stu, and single seller, Ted. Stu's goal is to exchange money for the information, and Ted's goal is to share the information in exchange for money. I will call the good a "lesson," the buyer a "student," and the seller a "teacher." For a mutually beneficial exchange to take place, as in any market, the potential traders must first recognize their reverse preferences.

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[4] Information economics is summarized in Stiglitz (2000, 2002), and Connelly et al. (2011) give an overview of signaling theory.
[5] Buchanan and Devletoglou (1970) point out that the artificial excess demand for higher education (due to demand-side subsidies and supply-side entrance barriers) encourages university competition on non-academic margins including unnecessary amenities. While this assessment may be true, it does not explain why there are any amenities in the first place.

Stu and Ted meet when they play an investigation game. The game starts with Ted providing a signal, which is a sample of the private information. The private information acts as a specific asset capable of earning quasi-rent, so it is the more specific good in the exchange.[6] This means Ted must commit his resources first, and he does so by signaling. The signal must be representative of the whole lesson, but not overly informative.

After receiving the first signal, Stu must make a decision. He could 1) accept the trade by offering money and a contract, 2) reject the trade and "take home" his small prize of private information, or 3) ask for another signal. Assuming Stu will eventually accept, his strategy will be to repeatedly ask for signals in order to learn the private information without committing his own resources. The teacher, Ted, will not want to divulge all of his information through signals (which would be renting out his asset for free). Thus, he will stop signaling and require an "accept" or "reject" decision when he values the sum of the signals, including the next undisclosed one, greater than the value of the potential trade. Of course, Ted can also reject the price and terms of the contract and offer his own.

2.2 *The Problems: Hold-Up, Post-Contractual Opportunism, and Free-Riding*

Thus, the student-teacher transaction has inherent complications. The teacher must be incisive in his signal giving—he must "give away" just enough information to prompt an exchange, but not so much that the student rejects the exchange and "takes home" the free information. The student, on the other hand, must be alert to the signals, using them as a proxy to make an assessment of the full lesson which is a credence good.[7] Therefore, there are two primary problems in a single-student, single-teacher market: 1) the student will attempt to hold

[6] "Rentable asset" is an appropriate characterization for the good of information—it is not lost in an exchange, but it does decrease in value.
[7] A credence good is a good where the buyer cannot accurately assess its quality before, during, or after the purchase and consumption (Darby and Karni 1973), as opposed to search goods (where quality is verifiable before purchase and consumption) and experience goods (where quality is verifiable after purchase and consumption) (Nelson 1970).

up the teacher by holding out on signing a contract, and 2) the teacher will attempt to opportunistically withhold information after signing the contract.[8] The market will break down. A third problem may arise if the teacher sends the first signal without a way of verifiably receiving feedback. A student will “free ride” on the information given through signals if he knows his consumption is unmonitored. Continual free riding can also lead to market breakdown.

Competition on the student side might help solve the student hold-up problem: the teacher could select the best deal from among many. But, a savvy teacher will recognize that he can rent his asset to many students at once. His strategy, then, will be to engage in monopolistic price discrimination, but if he does, the individual students will either 1) underreport their willingness to pay (their assessment of the credence good), or 2) engage in collective bargaining and again hold out on contracting. Either can lead to market breakdown.

Assuming other teachers can possess the private information so that it is only private from the students, teacher-side competition *is* effective. They compete on the margin of signaling and pricing—that is, the teachers prevail whose signals best represent the private information at the lowest price. Another complication ensues, though, if the private information is exclusive to one teacher. With full monopoly control of the private information, the teacher is stuck in the non-competitive model prone to market breakdown.

3. Judging a Book by its Cover

Clearly, this pure type of student-teacher transactions does not reflect reality: information is bought and sold ubiquitously. I argue that this is possible only because entrepreneurs find creative ways to employ transaction-governing institutions.

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[8] These problems are comparable to Klein, Crawford, and Alchian’s (1978) classic “appropriation of quasi-rents of specialized assets” and “post-contractual opportunism.”

3.1 *The Physical Commodity Market*

For example, the market is pretty good at regulating physical commodity transactions. Teachers, therefore, could impute their knowledge into a physical commodity and tap into this governing institution. A familiar example is a book.[9] Instead of costly signaling and haggling, the teacher hires a publisher, who then designs a cover and contracts with bookstores. When a student goes to the bookstore, he sees the first signal, the book's cover, and enters the investigation game. He may accept or reject a trade, or he may ask for a second signal by, say, reading the introduction. How does the teacher keep the student from reading the whole book? He does not have to—he has transferred that responsibility to the publisher, who has transferred it to the bookstore owner. And, as the market for books is far and wide, teacher-side competition hedges against post-contractual opportunism.

3.2 *Reputation*

Another institution is reputation. All costs that the teacher incurs to signal in the investigation game are sunk (non-salvageable) and can be viewed through Klein and Leffler's (1981) framework of quality-assuring brand-name capital investments. Thus, a reputation mechanism can serve as the transaction-governing institution if 1) the student and teacher deal repeatedly (which requires a risky first commitment by the student) or 2) the students can relay post-purchase assessments to other students (which can be tough for credence goods).

3.3 *Clubs*

Vertical integration is likely where the output is hard to measure (Barzel 1982) and where hold-up and post-contractual opportunism are possible (Klein, Crawford, and Alchian 1978)—in the market for information, both are the case. But because of the peculiarity of information as a

[9] Another interesting example is an egg timer, where the knowledge of egg cooking time is imputed to a physical commodity (Koppl 2018).

good, standard methods of vertical integration seem impossible. As a form of integration, then, clubs could be used to internalize the student-teacher transaction. A club could have definite bounds on size and output and could collect student payments and disperse teacher salaries. The club could also carry reputation and create its own "rule of law" to govern the transactions. In other words, a third-party "brokerage" could mediate the exchange.

Put simply, people prefer to consume some goods in groups, not individually. These goods are club goods, these people are club members, and whoever provides the good is the club. Club goods are excludable but non-rivalrous in consumption, in contrast to both public goods (non-excludable and non-rivalrous) and private goods (excludable and rivalrous). Information can be transmitted through certain mediums—namely, lectures—which fit this classification and fit nicely into the club model. Clubs are faced with an economizing challenge: include the optimal number of members and provide the optimal amount of the club good to each.

4. Old-School Schools

University education in medieval Europe provides an illuminating case of the contracting problems and the emergence of clubs to mitigate them.

Let me set the scene. Firstly, students, all males, studied at a younger age than today. A student could begin his bachelor's degree at fourteen and earn a master's degree by twenty (Rashdall 1936 vol. 3, 352). Most students were clerks at the local church, a helper of sorts, and out of this role came the standard academic attire—cap and gown—and *tonsure* haircut. Though emperors and kings held legal rule, the church itself claimed higher authority and was the key feature uniting Europe. Also, scholars everywhere spoke Latin in the classroom, which coincidentally provided an avenue for professors, students, or the whole university to move.[10]

[10] The majority of the university up and left Paris in "The Great Dispersion" due to conflicts with the ecclesiastical authority in 1229 (Rashdall 1936 vol. 1, 337; Gorochov 2018).

Remember, the universities were first non-integrated "marketplaces" where transactions happened one-to-one between students and teachers (as well as students and landlords and students and vendors). The university itself was a *stadium generale* if it attracted students from many regions and taught "at least one of the superior faculties of law (canon or civil or both), theology, or medicine" (Cobban 1988, 3).[11] Etymologically, *universitas* first referred to any group of people—guilds, councils, societies—and only in the late 14th century was reserved for the academic arrangement (Cobban 1988, 2). Universities were distinct from previous forms of higher education because students were awarded degrees upon completion. They arose to train intellectual men to "meet the demands of secular authorities, the Church, and the organized profession" during "a period of intense and eclectic intellectual activity" (Cobban 1988, 10). I take as exogenous both the advent of accreditation and whatever cultural force sparked this newfound era of cerebral exertion, the 12th-century renaissance.[12] Nevertheless, students and teachers flowed into university cities and attempted to form contracts.

4.1 *The Problems: Nay Payers and Free Readers*

But sometimes contracting was hard in the early university days. There was clear evidence of hold-up, as Rashdall (1936 vol. 1, 208) documents: "the ordinary practice was for a professor to employ a couple of scholars to negotiate with the other students as to how much each was to pay, but at times a large body of students would make their own terms with the professor and divide the cost among themselves," and "at times we find learned professors of the highest reputation haggling with their scholars over these payments in a highly sophist-like and undignified manner." Sometimes attempted hold-up led to obvious market breakdown: "for

[11] *Stadium generale* was a term that originally represented prestige, but, like a government declaring a pound sterling to mean a *thing* and not a *weight*, less prestigious schools could lobby the pope or emperor for the title by the 13th century (Cobban 1988).
[12] See Rashdall (1936 vol. 1, chapter II).

instance, we find the eminent jurist Odofredus announcing at the termination of a course of lectures that next year he would give no afternoon lectures at all because he had not found the scholars good pay-masters: 'they want to learn,' he pathetically explains, 'but not to pay. All want to learn but no one will pay the price'" (Rashdall 1936 vol. 1, 209).

The problem of teacher-side post-contractual opportunism does not appear as significant, which is consistent with the evidence of sufficient teacher-side competition (Cobban 1988, 40). The hold-up scenarios do nod to potential free riders, though, who did in fact exist. In medieval Europe, as Waddell (1927, 179) notes, "if one wished to abuse an antagonist, one called him a *gyrovagus*," that is, a *wanderer*, perhaps better translated *vagabond*. The church held the position that stationarity was best for body and soul—clerks needed special letters of permission to leave the diocese. There were plenty of real-life *gyrovagi*, however, including wandering scholars. It was customary to allow students to sit in lecture for three days or more before paying the professor, which would be taken advantage of by these wanderers (Rashdall 1936 vol. 3, 355).[13] As Waddell (1927, 202) describes them, "there is the baser type, the unfrocked or runaway monk or clerk, and the type, not so base but just as irreclaimable, the drunken M.A., the scholar without influence or money to get him a benefice, who found that Homer himself, without money in his purse to get him an audience, may go and live as the flies do." Waddell's account comes with no quantitative measure, but it ends somewhere in the 14th century—a relevant fact for my analysis. In summary, these vagabonds were unwelcomed educational free riders—or free readers.[14]

[13] It should be noted that the three free days could also be hard to enforce.

[14] At Oxford, the name "chamberdeacons" was given to "troublesome unattached scholars who continued to live in unlicensed rooms let by townspeople and who, under the cover of their position at the university, indulged in anti-social and criminal activities … sleeping by day, and haunting taverns and brothels by night, intent on robbery and homicide" (Cobban 1988, 149).

Reputational mechanisms were technologically limited in the first medieval universities. Only the best teachers like Peter Abelard were known beyond their towns (Haskins 1923, 14).[15] And, as noted above, even "professors of the highest reputation" still faced contracting issues. Additionally, the costs of using physical commodity markets were high, as books were scarce and expensive (Rashdall 1936 vol. 1, 421-3).[16] Therefore, the scholars needed a different form of institution to govern their transactions: they needed clubs. Colleges were those clubs.

5. College as a Club

I preface this section with a caveat. My argument is that club-like colleges emerged in the medieval universities, resolved contracting problems, and used in-house amenities to help manage, produce, and distribute club goods. I am not arguing that colleges were perfectly managed institutions or that the founders had deep economic insight into the contracting problems they were solving. In fact, the first "iterations" were just housing organizations. This account demonstrates the important fact that entrepreneurs do drive institutional change, yet their particular institutional settings influence their decisions—a paradox in any static model.[17]

5.1 *Emergence*

Before integrated colleges, students would join together to rent a townhouse and collectively decide on rules. This proved to be the norm except for the richest students who rented individually and for the poorest who "boarded in some miserable garret of a townsman's house" (Rashdall 1936 vol. 1, 499). The first college was the *Collège des Dix-Huit,* founded at the University of Paris in 1180 by a generous Londoner who supported eighteen poor scholars to live at a hospital (Rashdall 1936 vol. 1, 500).[18] The college had written statutes that detailed the

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[15] ratemyprofessors.com was launched in 1999.
[16] The printing press was launched in 1440.
[17] See Alchian (1950), Langlois (1992), and Grief (2000) for notes on this approach.
[18] Hospitals were for the poor as well as the sick.

number of students, allocation of funding, and rules to be followed, which differentiated it from the bottom-up management of the townhouses (Beckwith 2012). Many wealthy donors mimicked this idea. In 1257, the House of Sorbonne was founded and was the first to require its students to be of a single academic discipline—theology. Merton College, founded in 1264 at the University of Oxford, copied the arrangement of Sorbonne and became the exemplar for English colleges.

In the early 14th century, Kings College (Oxford), New College (Oxford), and College of Navarre (Paris) began to serve both graduate and undergraduate students, resulting in a natural inner-college hierarchy—and greater internal organization. At Navarre, "each class of students [grammar, arts, and theology] was presided over by a master, whose salary was fixed at double the allowance of a scholar of his faculty," and the master of theology headed the whole college (Rashdall 1936 vol. 1, 511). Colleges were no longer just for the poor.

5.2 *Learning Culture*

Perhaps an accident of history, scholarly performance improved in the hierarchical colleges that admitted students of the same subjects. At Navarre, "those who attended the same lecture were upon their return to college to meet together and peaceably go over it," and "the master…was required diligently to hear the lessons of the scholars studying in the faculty of arts and faithfully to instruct them alike in life and in doctrine" (Rashdall 1936 vol. 1, 516). Elder students mentored the younger, in other words. After university lectures, the collegian who could "best repeat it was to be listened to by the rest" (Rashdall 1936 vol. 1, 516).

Lectures are club goods because the teacher can sell to an additional student without raising his production cost (before the congestion level). But, this "learning culture" is also a club good, produced by the students themselves instead of a teacher. These early college students found that post-lecture learning was better in groups, and this proved to be an important educational element and an advantage for the colleges over other housing alternatives.

5.3 *Teaching In-House*

Colleges' full-fledged entrance into the lecture market was more subtle. At first, just tutoring sessions would be given by advanced students. Then supplemental lectures were given by collegiate professors by the 15th century.[19] Teachers found the colleges as attractive alternatives to university self-employment because both a lecture hall and a salary were guaranteed (Rashdall 1936 vol. 1, 528). In 1455, almost the whole University of Paris resided in the colleges, and "by the beginning of the 16th century it seems to have been possible to obtain a degree without attending any but college lectures" (Rashdall 1936 vol. 1, 518-20). By this time, individual colleges acted as competing educational centers in the same university town.

5.4 *Amenities*

The colleges all started as a chest of money and a benefactor's dream of an educated society. In other words, they were endowed. Starting with King's College, the *college* owned the dormitory building (many erected their own), and its managers were other scholars, not landlords. Soon, colleges also owned libraries, kitchens, chapels, courtyards, and lecture halls. Colleges were also safer than other housing options, often having barred doors and windows, which was quite the amenity during periods of social unrest (Rashdall 1936 vol. 3, 364).

5.5 *The Halls and Hostels*

Independent partly integrated halls were the colleges' biggest competing organizational form. In these organizations, "any mature member of the university, whether master or bachelor, could lease a house for a specified duration from a town landlord and establish a hall or hostel for scholars with himself as principal" (Cobban 1988, 146). Thus, halls had no endowment. These organizations competed in the housing and tutoring markets, but only rarely offered

[19] The universities had "ordinary" and "extraordinary" lectures given in the morning and afternoon respectively. Extraordinary lectures moved into the colleges first.

regular lectures. By mid-16th century, the halls were absorbed into the colleges, often by direct purchase (Cobban 1988, 150-156).

5.6 *The Club Argument*

It took 400 years for integrated colleges to develop into the dominant form of higher education. But, about 500 more years have passed since, and the integrated organizational structure is one of the only remaining traits from the old-school schools. Why is this? What is so important about bundling lectures with food, housing, and other amenities? I argue that this creates a club that can govern student-teacher transactions subject to problems of information asymmetry. The colleges brought the student-teacher transaction into a third-party organization to mimic standard vertical integration. That is, they formed a club to produce the club good of academic lectures. Additionally (and perhaps on accident), they harnessed the added value of post-lecture communal "learning culture" that also happens to be a club good.

The primary role that in-house amenities play in the club framework is twofold: help manage the club and distribute club goods. Remember, the economizing challenge for a club is to optimize member size and club good distribution. Free riding occurs when the limit on members is hard to set and monitor—like in open air lectures—but a limit on the number of beds does this job. Managerial tools of discipline and regiment are also made easier when the amenities are owned—monitoring 5 a.m. mass attendance or evening curfew in a non-integrated system would be tough. Additionally, in-house amenities are used to produce and distribute the club goods themselves: lecture halls for lectures and a whole gamut of amenities for "learning culture." Therefore, these amenities help build and set boundaries on the club.

An added benefit of in-house amenities is their durability and visibility. Large unmovable buildings carry reputation in the technical sense that they signal non-salvageable investments in brand-name capital. And, as brand names signal quality as well as qualit*ies*, in-house amenities can be used to sort before members join. For example, the fact that Merton College has a beautiful large chapel might attract the studious and religious while repel the lazy and corrupt. By investing in certain in-house amenities, then, colleges purposely design the "learning culture" club good, even if it is entirely produced by the students.

Two of the three problems predicted by the pure type student-teacher transaction have real evidence in the early non-integrated universities (student-side hold up and free riders). But, by the time university education was absorbed into integrated club-like colleges, the history books no longer document these problems.

6. Implications

We should see a decline in integrated educational institutions as entrepreneurs find other ways to govern the transactions, *ceteris paribus*. The emergence of non-integrated fully online education is unsurprising, then, as the internet allows students to verify quality of teachers and allows teachers to monitor students' consumption of information. In this case, as in the case of physical commodities, the governing institution is a technology. I write this in a college-owned library, though, so college-clubs are still being employed—technology takes time.

College-as-a-club theory also gives us insight into the array of in-house amenities today. Why would a college spend millions on a football stadium? By investing in large sports programs, modern colleges are indeed signaling for certain newcomers as well as facilitating the club good production of "learning culture."[20] Whether any particular culture-producing amenity is conducive to better learning is an empirical question, however, and it is up to the entrepreneurs to find the optimum amount of "entertainment" amenities.[21]

[20] See Clotfelter (2011).

[21] Entertainment itself has increased tremendously with standards of living, but much like Buchanan and Devletoglou (1970) who argue higher education itself is overproduced, I conjecture that entertainment amenities are overprovided due to higher education's quasi-bureaucratic status and close ties to government—an avenue for further research.

7. Concluding the Lesson

Where information is the good in exchange, sellers (teachers) must commit resources first by signaling to buyers (students) with a sample of the information. In these transactions, three problems can arise due to information asymmetry: hold-up, post-contractual opportunism, and free riding. Wherever information is sold, I argue that entrepreneurs are finding ways to employ transaction-governing institutions to mitigate these problems. One kind of governing institution is an educational club—an organization that internalizes the student-teacher transaction and produces club goods. This kind of governance is demonstrated in medieval Europe where integrated colleges emerged as educational clubs that mitigated the contracting problems of the non-integrated universities. The in-house amenities of these colleges helped manage the club, produce and distribute club goods, and sort incoming members. This historical case also exhibits the evolutionary nature of institutional change—it was poor houses that set this process into motion.

Much more can be done on information transaction governance as well as organization in medieval education. My college-as-a-club argument just scratches the surface. Additionally, the college-as-a-club framework could be refined to better fit today's higher education environment, particularly accounting for the entertainment amenities.

If you are in a collegiate institution—student, teacher, or staff—imagine being self-employed doing the same task. Self-employment might be kind of tough. It might be hard to find trading partners. It might be hard to strike contracts. After all, that is why you thought it made sense to join an integrated organization that bundles education with other amenities. Well, welcome to the club.

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