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**Abstract:** Perhaps one of the most widely recognized building blocks of inventory theory is the “newsboy” or “newsvendor” model. This paper begins by addressing following questions: When was the model first developed? Was it really motivated by the study of newsboys? Who articulated the now (mostly) established idea that the model’s conclusions could be generalized? Next, the paper argues that before we can even attempt to generalize insights from the model to other situations, we must understand its limitations when applied to the very apparent reason for its existence: actual newsboys. However, a study of present newsboy contracts is almost futile without a deep understanding of the chain of events that lead to its present form. Following this logic, the paper then discusses a second set of questions: When and how have newsboy contracts evolved in the US through the years? Did circumstances change in a way that impacted the types of contracts used in practice? Why is it that today, of all possible contracts, the “wholesale price, full returns” contract prevails? By describing the evolution of real newsboy contracts, this paper concludes by stating that the answers to some of the questions posed above are necessarily context specific, and thus generalizations across industries or countries are more difficult than the extant literature seemed to imply.

Subject Classifications: Inventory/Production: Newsboy/Newsvendor Model. Professional: History of OR/MS.

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*“One greater than kings had arrived: the newsboy”*

Mark Twain, *A Connecticut Yankee in King Arthur’s Court*, 1889<sup>i</sup>

## **1. Introduction**

Perhaps the two most wildly recognized building blocks of inventory theory are the EOQ and the “newsboy” or “newsvendor” models. Ernelkotter (1989, 1990) discusses the history of the development and early diffusion of the EOQ model in OR/OM. However, there has not been such a systematic study of the origins of the “newsvendor” model, despite the existence of more than 300 articles that have been featured in the OM/OR literature which use the words “newsboy” or, more recently, “newsvendor”, and the model’s increasing popularity (see Figure 1 in the Appendix). In fact, from 1970 on, the newsboy was mentioned in articles on a variety of topics including statistics (Hayes, 1971), computers (Ignall, 1972), finance (Magee, 1975), workforce scheduling (Baker, 1976), accounting (Hilton, 1979), incentives (Jennergen, 1980), job scheduling (Ackere, 1990), and the cognitive differences between operations researchers and managers (Huysmans, 1970). Arguably, there are three main reasons for the model’s popularity: (a) the model is tractable, (b) it represents in almost pure “canonical” fashion the basic tradeoffs involved in dealing with uncertainty, (c) it has been widely believed that the insights from the model can be generalized to many real situations. This paper is mostly concerned with the third assertion.

In its most simple formulation, the newsvendor has to buy newspapers at a given price, in anticipation of a future, uncertain demand whose distribution parameters are known. If the newsvendor orders more (less) than actual demand, he or she incurs some overstocking cost (understocking cost). Given the model’s almost naïve simplicity, almost the whole relevance of the supply chain literature depends on the assumption of generalizability.

Of the mentioned references to the problem in the literature, about 200 papers (or about two thirds of all the references) are concerned in a direct or indirect way with the following problem: assume that, instead of having one decision maker, the manufacturer of a widget and its seller are different persons/entities (*e.g.*, a manufacturer and a retailer). Given that under such scenario each entity may make decisions that are sub-optimal with respect to what would be achievable if there was only one decision maker, these papers mostly address the following question: How should the two parties pay each other (*i.e.*, contract) to maximize supply chain (*i.e.*, manufacturer's plus sellers') profits? The vast majority of papers addressing this question go on to assume that the seller is facing some sort of newsboy or newsvendor problem, directly or indirectly implying that the insights from such simplification can be applied to many real situations. This stream of literature, often called the "Supply Chain Contracting" literature –see Cachon (2001)-, has studied some contracts that make the seller's compensation (a) depend on his or her sales, such as "wholesale price" (these with or without quantity discounts), "buy back" (these either at full or partial purchasing cost, and either with or without a maximum number of returns accepted), "revenue sharing," etc., (b) simply a "salary" or "flat fee," and (c) combinations of (a) and (b). By now, there are multiple possible contracts that apply to multiple possible variations of the main problem involving a manufacturer and a newsboy. The problem, as Cachon (2001) states, is that:

*The set of coordinating contracts is quite large and it is even quite likely that there exist other types of coordinating contracts. While it is possible to identify some differences among these contracts (...), none of them is sufficiently compelling to explain why one form should be adopted over another. More theory probably will not provide the answer. We now need some detail and empirical analysis.*

Nevertheless, before we can even attempt to generalize insights from these models, we must understand the limitations of such models when applied to the very apparent reason for their existence: actual newsboys<sup>ii</sup>! This is especially true when (a) of all possible contracts studied in the literature, only one prevails at present times (*i.e.*, the unlimited returns at full price contract, almost always without quantity discounts), and (b) the prevailing contract has changed over time. Given this, a study of present newsboy contracts is almost futile without a deep understanding of the chain of events that lead to its present form. As it will become clear in this paper, a complete analysis of real life contracts, even simple ones -like most scholars seem to presume newsboy contracts are-, needs to be framed in its economic, technological, legal, and even social context. Without such context, we cannot answer the question posed above by Cachon (2001). In addition to this, because context is industry and even country specific, generalization is more difficult than we seemed to have assumed in the extant literature. We will thus embark on a historic journey taking us from the very first newsboy in the U.S., all the way to present times. During our trip, we will attempt to check whether our modern understanding of the problem can be used to explain some of the changes that the contractual relation between newspapers and newsboys have undergone, and uncover some modern “myths.”

The paper is organized as follows: Section 2 studies the Origin of the Newsboy Problem in the OR/OM Literature; Section 3 reviews The Newspaper Industry and Real Newsboy Contracts Throughout History. Section 3.1 describes The First Newspapers in the World; Section 3.2 mentions The First Newsboys in the World; Section 3.3 finds The First American Newspapers and Newsboys; Section 3.4 discusses The First Registered Newsboy Contracts. Section 3.5 covers The Rise of Intermediaries and the Newsboy Giant; Section 3.6 states The Newspapers’ Response; Section 3.7 describes The Cancellation of Return Privileges; Section 3.8

discusses how Return Privileges Become Dominant Again; Section 3.9 observes The Decline of Single Copy Sales; Section 3.10 describes Current Practices. Finally, Section 4 concludes the paper.

## **2. What's in a name? The Origin of the Newsboy Problem in the OR/OM Literature**

In this section, we will attempt to answer the following questions: When was the model first developed? Was it really motivated by the study of newsboys? Who articulated the now (mostly) established idea that the model's conclusions could be generalized?

Although Fry (1928, pp. 229) discusses the closely related problem of calculating optimal stocking quantities when facing uncertain demand at a retail store given an exogenous service level, he does not use, or discuss the use of, overage or underage costs to determine such service level (in fact, the problem stated makes no reference to costs at all). The earliest reference we were able to find to the actual problem we now widely call "the newsvendor problem" dates to the classic textbook by Morse and Kimball (1951)<sup>iii</sup>, who introduce the problem the following way "*As a somewhat more complicated example, let us consider the case of a newsboy who is required to...*" It is important to note that this example was perhaps the only "civilian" illustration in a book almost completely dedicated to military examples and applications<sup>iv</sup>. In fact, a lot of the early work in inventory theory had military applications in mind. For example, Morse and Kimball's book had been classified as a national security secret for some time before its 1951 release, and its ideas were mostly developed during World War II. This suggests that the model was not initially motivated by the study of newsboys. The seminal Arrow, Harris and Marshack (1951) article simply calls the problem "*A static model with uncertainty*". Much later, in a paper that explains the genesis of his 1952 work, Arrow (2002) makes no mention at all about the model being motivated by newsboys or even newspapers, but

instead, states that “...*the Navy had a clear interest in minimizing inventory costs,*” which is consistent with Morse *et al* (1951). Another early seminal work by Dvortezky, Kiefer and Wolfowitz (1952) does not mention newspapers at all, and the examples of underage costs cited are: “*a store loses sales, soldiers in battle run out of ammunition*”. Later that year, Whitin (1952) calls the model “*an inventory control problem for style goods*”, and illustrates it with the example of a mail order business, without mentioning newspapers anywhere in the paper. Magee (1953) mentions the model by calling it “*the classical newsboy problem*”, but references the reader to the Morse and Kimbal (1951) book. In a survey paper, Whitin (1954) does not call the problem a newsboy or mention any newspaper applications. Although the mentioned Whitin (1952) had a section concerned with style goods, the first clear, comprehensive attempt to generalize insights from the newsvendor problem was Magee (1956c). Although Magee mentions “*the classic newsboy case,*” he calls the general issue “*The crash or short-peak season problem which arises, for example, in the toy industry before Christmas or in certain fashion clothing lines at various times during the year.*” After describing the newsboy problem, Magee (1956c) goes on to say “*The newsboy problem is, after all, not so different from many business problems,*” and then “*Here are some common business situations that can be approached in the same general manner as the newsboy case;*” where he cites examples from retailing, manufacturing of highly seasonal goods, hotels, airline and railroad reservations, and others. Finally, Magee proceeds to illustrate and solve a problem using the case of cosmetics sold in a special Christmas package. Hadley and Whitin (1963), one of the earliest thorough books on inventory models, calls the model “*the Christmas tree problem or newsboy problem*”, and proceeds to illustrate a Christmas tree example. By then, however, the “*newsboy*” name had been widely adopted. All later references to the problem either call it a “*newsboy*” or “*newsvendor,*”

for example, see Geisler (1963), Hodges and Moore (1970), and Eppen (1979). Later, in one of the articles that gave birth to the supply chains contract theory, Pasternack (1985) calls the model “a newsboy”, refers to “limited life commodities (e.g. newspapers, baked goods, periodicals, records, etc.)” as situations where the model would apply, and further defends the use of the newsboy model to generate general insights by citing earlier work. Ever since, most papers using the term “newsboy” hardly refer to actual newspapers, and the use of the model is most often justified by its potential applicability to a number of other situations. Interestingly, based on informal surveys and one of the author’s experience as a consultant to the newspaper industry, actual applications of the model to the newspaper industry do not seem to be the norm even today. For one notable exception, see Koschat et al (2003).

### **3. The Newspaper Industry and Real Newsboy Contracts Throughout History**

#### **3.1 The First Newspapers in the World**

“In roman times, the *Acta Diurna*, in manuscript, gave accounts of fires, executions, and remarkable hail storms” (Hudson, 1873, pp. XXVII). However, the first newspaper ever was printed in 1457 in Nuremberg, Bavaria (Hudson, 1873, XXX). Another of the first news-letters was printed at Venice around 1531. Thomas (1810, 1970 revised edition pp. 9), claims that the price was one Venetian coin called “gazetta”, and that this is the origin of the word gazette. Hudson (1873, pp. XXI), however, states that the mentioned earlier Nuremberg newspaper was already called *The Gazette*.

Although the first newspapers date to 1457, the first English newspaper, known as a “*coranto*”, was an English translation of a Dutch *coranto* published in 1620, by Nathaniel Butters (Clair 1965, pp. 146). However, it wasn’t until *circa* 1640 that “newspapers in the full sense of the word” appeared in England (Clair, 1965, pp. 150). Finally, the first daily newspaper

in English was the *Daily Courant*, a morning paper first issued in March 1702 (Hudson, 1873, pp. XXXV). The first daily newspaper in the US was the *American Daily Advertiser*, 1784 (Hudson, 1873, pp. XXXIV).

### 3.2 The First Newsboys in the World

Thorn and Pfeil (1987 pp. 34) mention that the roman *Acta Diurna* were “*distributed daily to the homes of subscribers, posted on the walls of Rome, and stored in government archives where citizens could review back copies.*” There is no mention, however, about how such deliveries were paid or contracted.

Around 1620, the same Nathaniel Butters, father of the English newspaper, is credited with having “invented” what we would understand as newsboys, which he called “*mercury women*” and “*hawkers*” (Hudson, 1873, pp. XXXIII). Therefore, women were among the early newsboys<sup>v</sup>. We were unable to find, however, any reference as to how these people were paid. The first advertisement ever published, “a reward for the recovery of two stolen horses”, dates to March, 1684 (Hudson, 1873, pp. XXXIV)<sup>vi</sup>.

### 3.3 The First American Newspapers and Newsboys

The first American newspaper called *Publick Occurrences: Both Foreign and Domestick* was published by Benjamin Harris in Boston, on September 25, 1690, but lasted only one edition, after being banned by government for not having official permission to print, and “*having reflections of a very high nature*” (Hudson, 1873, pp. 1-50)<sup>vii</sup>. We were unable to find records of how many copies were printed, or how it was distributed. However, having been printed in a Coffee-House, we suspect that the edition was intended only for the Coffee-House patrons, possibly for free.

The second American newspaper and the first regularly appearing one, *The Boston News-Letter*, appeared on April 24<sup>th</sup> 1704. The paper had the government's blessing since its editor, Mr. John Campbell, was the Postmaster of Boston. Another benefit of the fact that Mr. Campbell, the newspaper editor, was the Postmaster was that the newspaper was mailed at no cost to its editor or readers. Advertisements were to be inserted "at a reasonable rate, from twelve pence to five shillings," and subscriptions would cost "reasonable terms" which ended up being 12 shillings per annum (Hudson, 1873, pp. 51-54; Lee, 1937 pp. 25). Newspapers could also be bought at the printer's office for a unit price of 2 pence a copy (Lee, 1937 pp. 25). The first edition, however, had no advertisements. Also, no single copy sales meant Campbell had a hard time collecting subscription fees, given that subscribers were billed after the subscription period (Thorn and Pfeil, 1987 pp. 35). This problem plagued early newspapers until the introduction of the "penny-press", circa 1833. After trying by different means, Campbell published a strong appeal for his customers to pay in his August 1719 edition. He often had to resort to government subsidies to survive. Later during 1719, Campbell was removed from his position as Postmaster, and William Brooker was appointed in his place. To protest, Campbell refused for a while to send the paper to its subscribers through the mail, which prompted the new Postmaster to start his own paper, *The Boston Gazette*. By the time Campbell decided to start sending newspapers again, he had gained a new enemy, and was duly charged a fee for delivering papers through the mail, which eventually put him out of business (Hudson, 1873, pp. 57-61). The third American newspaper, the *American Weekly Mercury*, was issued in Philadelphia in 1719 by Andrew Bradford, that city's Postmaster. When yet a new Postmaster in Boston decided to change printers, *The Boston Gazette's* first printer, James Franklin, decided to launch his own newspaper. The *New England Courant*, born in August 1721, was the fourth

American newspaper, and the first paper since *Publick Occurrences* without an official blessing (Hudson, 1873, pp. 61-70). Absent the free mail privilege, the *New England Courant* attempted a new form of distribution: James's younger brother, Benjamin, would deliver the paper to subscribers that included "local taverns, reading rooms, inns, and homes of upper class merchants" (Thorn and Pfeil, 1987 pp. 35). Fifteen-year-old Benjamin Franklin was, therefore, America's first newspaper carrier<sup>viii</sup>, although he was also a *printer's devil* (i.e. an apprentice of the printer). It must be noted that, because Benjamin Franklin was working for his family's business, he may not have made a salary. In fact, DiGirolamo (1997, pp. 38) states that "*he [Benjamin Franklin] claimed that he ran away [from Boston] because of his brother's harsh and tyrannical treatment.*" In any case, using *printer's devils*, who usually worked for a salary, for delivery of newspapers became common practice for many years to come. This practice coexisted with mail carriers.

The first reference to a specialized newspaper carrier is an ad placed in September 14, 1761, in Hugh Gainé's *The New York Mercury*, for "a nice boy to deliver papers to city patrons" (Lee, 1937 pp. 25). The very first recorded instance of actual newsboys in America came with the revolution and the early ideas building up to it. Because either printing or subscribing to a revolutionary paper meant risking jail or even death, single copy sales were the safest option. In addition, young kids were probably less likely to be prosecuted, so employing them to sell seemed like the best alternative. On Saturday, September 21, 1765, *The Constitutional Courant*, printed by William Goddard under the fake name "Andrew Marvel", was sold by hawkers on the streets of New York. It apparently sold out and was later reprinted in Boston (Thomas, 1810, 1970 revised edition pp. 524-5). The paper did not go unnoticed. A war council was called, although the identity of author or printer could not be established. The council, however, did do

posterity some service: it provided us with the name of one of the hawkers, Lawrence Sweeney<sup>ix</sup>, called as a witness. Lawrence Sweeney is thus the first identifiable American newsboy in history. We found no record of how Sweeney was paid. Although there is reference of other revolutionary anonymous papers being hawked during the war, after the war the practice mostly vanished from history for around 65 years. Benjamin Towne, editor of *The Pennsylvania Evening Post*, is one exception. After 1782, when the post was terminated, Towne occasionally published handbills, headed “*all the News for two coppers*”, which “*were hawked in the streets by himself*” (Thomas, 1810, 1970 revised edition pp. 524-5). Thus, Towne’s publication was vertically integrated, and Towne had no contract to sign with anyone. Unfortunately, we have found no records about how he made printing quantity decisions.

Despite scattered stories of early street distribution, most papers at the time were intentionally not sold on the street. Hawking was seen as a sign of bad taste, and actually detrimental for business. For example, Lee (1937, pp. 258) states:

*The early distribution of the New-York Evening Post, established in 1801, roughly typifies the 1784-1830 situation. With an annual subscription rate of \$8, equal to a worker’s pay for ten days, the paper was in the luxury category. The Post was not peddled on the streets. The editor would have been shocked to have heard his sheet hawked. If someone wanted a single copy, he had to pay 12 ½ cents for it at the printer’s office.*

### **3.4 The First Registered Newsboy Contracts: The Penny Press**

The next notable development in the history of the newsboy contract happened on September 3, 1833, the day Benjamin Day’s *The Sun* came out in New York City. *The Sun* was the first successful daily newspaper sold for a penny, giving birth to the “*penny press*” arguably

the first modern newspapers<sup>x</sup>. Prior to this, the typical American newspaper sold for six cents<sup>xi</sup>. Also, the paper's size was significantly reduced, to 11.25" x 8"; other newspapers at the time were so large that they were called "*blanket sheets*," and described as "*mammoth folios of ridiculous dignity and limited circulation*" (Hudson, 1873, pp. 416). Finally, Day brought back the idea of hawking newspapers on the streets, which, with the mentioned exception of a few revolutionary papers during the war, was seen as not suitable for "respectable" papers since the time of L'Estrange, in England, *circa* 1660 (Hudson, 1873, pp. 416)<sup>xii</sup>. For his first edition, Day, a journeyman printer, and a young *printer's devil* hawked the papers themselves, selling around 300 (Hudson, 1873, pp. 418; Thompson, 2001). The next day, the paper ran the following ad:

*TO THE UNEMPLOYED: a number of steady men can find employment by vending this paper. A liberal discount is allowed to those who buy to sell again.*

The first person to respond to the ad was a ten-year-old-boy, Bernard Flaherty (O'Brien, 1918, pp. 18). In interviews on occasion of *The Sun's* 50<sup>th</sup> and 100<sup>th</sup> anniversary, Day (1883, 1933) stated that he hired "*four or five boys*". The terms of the initial contract were the following: \$2 per week to sell 100 newspapers per day. Day (1883, 1933) also mentioned that "*if they managed to sell more than a hundred papers I paid them so much extra*". Therefore, the first American newsboy contract ever recorded was a flat fee plus commission over a 100 units, and in the case of a stockout it would seem like the boys were able to come to Day to ask for more. Unsold units could be returned for full credit (Lee, 1937 pp. 265). One of the effects of the contract was that the problem of collecting unpaid subscriptions, so prevalent in the industry ever since Campbell's paper in 1704, was finally solved from the newspaper's point of view: the paper would simply collect from the newsboys regardless of whether end customers paid the newsboys<sup>xiii</sup>. As it turned out, the combination of a low price, novel news, smaller format, and a

newsboy sales force was widely successful. In a few days, *The Sun*'s circulation grew to 1,000 copies/day (at the time, established "six-pennies" printed around 2,000 apiece).

Day (1883, 1933) stated "*I ran this system some time before I set up carriers with regular routes.*" Sam Messenger was among the first carriers. For carriers, the contract was the following: for every 100 copies of the paper, carriers would either pay (a) 67 cents cash, or (b) would be given a 75 cent credit that would have to be paid before they could collect the next batch. Unsold units could be returned for full credit (Lee, 1937 pp. 265). Initially, *The Sun* accepted direct subscriptions, but they had to be paid in advance. (O'Brien, 1918; Day, 1883, 1933).

Although most sources (including Day himself) seemed to clearly understand the difference between a carrier and a newsboy, some questions remain. For example, Thorn and Pfeil, (1987 pp. 45) state that:

*Carriers sold the newspaper to customers and profited on the difference between wholesale and retail rate. No subscriber dealt directly with The Sun, but rather with the local carrier or news agent. By demanding advanced payment from middlemen, Day solved the delinquent subscriber problem and assured a regular cash flow.*

If that was the case, carriers may have sold single copies as well as subscriptions, and Day had no direct way to know this. It is also interesting to note that carriers may have had some subscribers paid in advance for a quarterly/annual subscriptions, in which case the carriers would have access to funds, and, at the same time, may have had subscribers who paid *ex post*, in which case the carriers would be providing credit (since *The Sun* had to be paid daily). Yet another unanswered question was how territories were established or kept. Day (1883, 1933) and other

sources state that carriers had assigned routes or territories, but it is not clear how this was enforced. However, there is some evidence of the efficiency of such enforcements: DiGirolamo (1997, pp. 49) states that Sam Messenger, who was selling some 700 papers a day in his territory, bought a route from a man named Southwick, and that soon zones could not be purchased for less than 600 to 700 dollars<sup>xiv</sup>.

Soon, the newspaper's spectacular initial success took it to new heights. By December, circulation climbed to about 4,000 (Thompson, 2001)<sup>xv</sup>. In 1835, circulation was reported to be at 19,000, although it has been reported that only 2,000 of these were sold in the streets by newsboys, the rest being sold by subscription and delivered by carriers to regular subscribers (Nerone, 1987). Many more penny papers followed *The Sun*. In fact, the total number of dailies in America swelled from 65 in 1830 to 547 by 1870 (Lee, 1937 pp. 64). The idea of using independent newsboys spread with the *penny papers*, but a new innovation on contracts for carriers was soon introduced by the *Philadelphia Public Ledger*, a newspaper born in March 1836. The list of subscribers was the paper's property, and a copy of it was kept in the office. Deliveries were made by the paper's employees. Thorn and Pfeil (1987 pp. 46) state that by 1870, 80% of the paper's total circulation of 70,000 was delivered by carriers; newsboys, cigar stores, and other newsstands sold the rest.

We have no precise evidence of how popular the Philadelphia way of contracting carriers was, but all sources point at anecdotal evidence that *The Sun's* idea of independent contractors prevailed. For example, the newsboy population grew. *Circa* 1850, New York had an estimated 500 to 600 newsboys, and there were at least ten times that many nationwide (DiGirolamo, 1997, pp. 3). Also, in the decade of 1860, the advent of the evening newspapers made newsboys extremely important, as single copy sells swelled in importance. For example, *The Round Table*,

a meeting of many prominent newspaper managers, reported in 1866 that “*the subscription business of many of our leading newspapers is almost nominal*” (DiGirolamo, 1997, pp. 177).

### **3.5 The Rise of Intermediaries and the Newsboy Giant**

Initially, each newspaper had its own carrier force. With the advent of the early penny papers, as newspapers competed with each other in “circulation” or “moral” wars, newspapers attempted to limit the newsboys/carriers assortment options, and make access to distribution channels a barrier to entry. For example, when Horace Greeley started *The New York Tribune* in 1841, both *The Sun* and James Gordon Bennett’s *Herald* instructed its newsboys and carriers not to sell the entrant newspaper (Lee, 1937 pp. 262). Something, however, had changed since *The Sun*’s birth. There are clear economies of scope in the delivery and sale of newspapers, and as soon as the first competitors entered the market, newsboys and carriers started selling more than one paper. However, this required the sellers to collect the papers at different points in the city. By the late 1830s, intermediaries appeared that would collect papers in aggregate form, break bulk, and deliver the full assortment to points of easy access to newsboys and carriers for a slight increase in the wholesale price. As their volume grew, so did the intermediaries’ power. In the mentioned case of the *Tribune*’s entrance into the New York market, it turned out that by 1841 nor *The Sun* neither the *Herald* were able to confront these intermediaries, who demanded freedom to sell whatever paper they so chose. Both papers tried to regain control of their routes, but the experiment failed. *The Tribune* was finally carried by the intermediaries who also sold competing papers (Lee, 1937 pp. 262).

To further increase their power or achieve economies of scale, these intermediaries went on to fund conglomerates and associations that soon became monopolies. Two notable examples are, the *Central News Company* of Philadelphia (1869), and New York’s *American News*

*Company* (1856), who at a time controlled over 20,000 agencies across the country, and was called “the newsboy giant”, (Lee, 1937 pp. 262; Thorn and Pfeil, 1987, pp. 48). As a result, intermediaries became a dominant force in the industry. For example, in 1880, *The Sun* sold 101,165 of its daily papers to New York news companies (*i.e.* intermediaries), 14,443 to news-dealers out of town who bought directly, 5,221 to mail subscribers, 792 directly to individuals, and 12,237 to newsboys (Lee, 1937 pp. 264). This, in turn, came with a new contracting innovation: dealers began demanding a bonus before they would carry a paper, thus giving birth to lump-sum money transfers in the newsboy contract, a precursor of today’s slotting allowances.

These intermediaries did not limit the use of their power to new assortment issues. Having a monopoly over the sale/distribution of newspapers also gave them price-setting power. Because the dealers made money on the difference between wholesale and retail price, they had an incentive to charge higher retail prices<sup>xvi</sup>. There is evidence of newsboys/carriers charging extra for papers as far back as 1862. Thomas Alba Edison, the famous inventor, was a *Detroit Free Press* newsboy who sold newspapers on a railroad line from Detroit to his home in Port Huron, Ohio. Right after the bloody battle of Shiloh, he ordered 10 times his usual number of papers, and was selling papers so easily that he decided to raise the price from 5 to 10 to 25 cents a piece, pocketing the difference (DiGirolamo, 1997, pp183). At the same time, two separate forces limited the newspaper’s price-setting power: (a) competition with other newspapers, for obvious reasons, and (b) advertising, which was becoming more and more important for newspapers’ businesses<sup>xvii</sup>, because the revenue generated by it was proportional to circulation<sup>xviii</sup>, and lower prices induce more circulation. For example, in September 1883, Bennett, to cope with Joseph Pulitzer’s *World*, attempted to lower the *Herald*’s price to 2 cents.

The dealers revolted, and the *Herald* attempted to establish its own sales force. By March 1885, however, Bennett had to yield, disbanding his sales force, and going back to his previous price<sup>xix</sup>.

It would be interesting to know how these dealers paid the carriers and newsboys. For example, Mark Maguire, known as “*the king of the newsboys*,” circa 1840 reputedly employed five hundred boys, and stated that he offered them “*either straight pay or a share of the profits*” (DiGirolamo, 1997, pp. 159). Also, there is evidence that newsboys often had to pay for the right to sell on a determined corner late in the 19<sup>th</sup> century and the first third of the 20<sup>th</sup> century. For example, a 1926 investigation in Washington, D.C. found several cases of such “bonuses” being paid by newsboys, although sometimes the helpers simply “earned their right to a spot simply by virtue of his years of service to the departing owner” (DiGirolamo, 1997, pp. 328). The payment of “bonuses” or “rental fees” by newsboys for the use of corners during the same period is also described in Simpson (1992), who writes about Seattle newsboys, Bekken (1995, pp. 196), who mentions the practice happening in Cincinnati, and Bekken (2000), who writes about Chicago newsboys. However, we were unable to find more specific reference to terms of the contracts between dealers and newsboys in the 19<sup>th</sup> century. This may be because, as DiGirolamo (1997, pp. 159) stated:

*The history of newspaper distribution in general, and the American News Company in particular has not yet been written, so it is impossible to take and existing account of the industry's rise and fold.*

### **3.6 The Newspapers' Response**

The rise of the distribution dealers and their early skirmishes with the newspapers provoked the reaction of the latter. Firstly, the newspapers formed their own cartels and associations to put pressure on the dealers. For example, Bennett himself was involved in this

(Thorn and Pfeil, 1987, pp. 49). Although these cartels, as predicted by economic theory, were highly unstable and often broke up, they did win some “battles” allowing the newspapers to change contracting terms for some time in certain cities. For example, in 1898, a Chicago trust successfully adopted a uniform 2 cent cover price and identical wholesale terms, “*undercutting distributors’ and newsboys’ ability to switch newspapers in search for better margins*” (Bekken, 1992). In any case, there is evidence of these cartels being fairly common, and of them attempting a number of collusion tactics beyond distribution (Parker, 2001)<sup>xx</sup>.

Secondly, the newspapers started paying close attention to circulation issues, and created the position of “circulation manager”. Scott (1915, pp17) states that Alex Thompson, appointed in 1890 at the *New York Evening Post*, was the first one ever, while Thorn and Pfeil (1987, pp. 53) claim that the honor belongs to M.A. McRae, appointed by *The Detroit Evening Sun* in 1874. Interestingly, though not surprisingly, three New York papers including Pulitzer’s *World* successively hired the very same person who, in 1883, had successfully organized the dealers that opposed Bennett’s price changes, a gentleman by the name of Richardson (Lee, 1937 pp. 265).

Thirdly, the newspapers tried to promote the creation of competing dealers as alternative channels that could compete with the monopolies. For example, Bennett attempted to push a *Mutual News Company* with which to combat the *American News Company* (Lee, 1937 pp. 264).

Finally, the newspapers attempted using their own direct distribution channel which, to impose itself over the existing independent dealers and newsboys, sometimes resorted to violent means. For example, when William Randolph Hearst’s *American* and *Examiner* entered the Chicago market in 1900, Hearst’s man, John Eastman, “*hired ex-prize fighters, wrestlers, and other hard-boiled men to protect and push street sales*” (Lee, 1937 pp. 267; Bekken, 1992). The

Annenberg brothers, Max and Moses, in turn, created street gangs for the same purpose. Thorn and Pfeil (1987, pp. 52) state that “*Newspaper sluggers and gunmen burned newsstands, stole trucks, and kidnapped newsboys*”<sup>xxi</sup>. Of course, none of the regular newspapers published anything about such issues (Lee, 1937 pp. 267; Bekken, 1992). It is, however, not clear how predominant these techniques were. Although there are accounts of violence being used in other cities such as Cincinnati (Nasaw, 1985, pp. 65) and Seattle (Simpson, 1992; Nasaw, 1985, pp. 66) states that “*circulation managers like the Annenbergs, with their arsenal of weapons, were the exception, not the rule*”. In any case, direct distribution grew over time. A 1922 decision by Federal Judge K.M. Landis (286 Fed 111) stated that newspapers were entitled to impose exclusivity clauses on its distribution channel. During 1923-24, both the *American* and the *Herald* took over parts of their own distribution. This was challenged in court by the *Metropolitan News Company*, but in 1924, New York Supreme Court Judge F.L. Young ruled in favor of the newspapers (Lee, 1937 pp. 268). As a result of the combined efforts by newspapers, the battle was all but over by the mid 1930s: a 1934 survey stated that over 90% of newspapers dealt directly with their carriers and newsboys (Thorn and Pfeil, 1987, pp. 49; Lee, 1937 pp. 269)<sup>xxii</sup>.

### **3.7 The Cancellation of Return Privileges**

In parallel with all this, new contractual developments happened. *The Sun*, who had developed the first American newsboy contract, stopped the practice of buying back unsold copies *circa* 1884 after discovering that some of the newsboys “collected discarded papers and sold them back to newspaper offices” (Lee, 1937 pp. 265). This was the first of a wave of such measures. For example, Lee (1937 pp. 266) quotes the *American Newspaper Publishers’* association, who, in 1916, reported that at least 540 dailies no longer permitted returns. This

included many notable newspapers. For example, in 1898, all of Chicago's evening papers outlawed returns or exchanges for later editions (Bekken, 2000) and in 1899, Eduard Wyllis Scripps' *Seattle Star* decided not to accept returns (Simpson, 1992). Thus, the situation that Magee (1953) called "the classical newsboy problem", that is, a newsboy having to decide how many papers to order, risking that unsold units would have to be discarded at a loss, only begun to exist *circa* 1880, some 50 years after the first documented newsboy contracts.

If we follow Pasternack's (1985) insights, a newsboy not offered the option of returning unsold inventory would tend to order less newspapers than a newsboy allowed such option. If this is so, how did newspapers mitigate this? First of all, there is ample evidence of newspapers determining stocking quantities for the newsboys during the years that returns were not allowed. For example, Postol (1997a, pp. 244), quotes Kenneth Cartwright, a 1934 carrier that stated "*I carry the Mobile Press, have 93 customers, but they make me carry 13 extras and pay for them*". The extra were supposed to be sold as single copy or to new subscribers. Later, Cartwright stated that the *Press* had introduced a contest and given every carrier a quota, and that the carriers who did not meet the quota would be fired. In Chicago, 1912, the *Chicago Federation of Labor* papers have records indicating that "the newsboys were compelled to take a stipulated amount of copies whether they wanted them or not" (Bekken, 2000). Even newspaper publishers admitted to such practices. In a letter to Hearst, Victor Lawson, the president of the *Newspaper Publishers Association* sated that the newsboys where "*being compelled to eat papers,*" and he later calls this "*an abuse*" (Bekken, 2000). A 1917 study mentions that circulation managers would "*regularly pressure the boys to buy more papers than they could sell*" (Nasaw, 1985, pp. 65). This pressure did not always happen by *fiat*. As we previously mentioned, violence was sometimes used. For example, in 1915, the *Chicago Newboys Union* stated:

*We [the newsboys] are subjected to insults and abuses (...) newsboys have had their eyes blackened, their noses broken, and their teeth knocked out on many different occasions for the simple reason that they refused to take [an] excessive number of papers. We are continually told by our drivers and division bosses that if we do not eat papers, we will be slugged and put out of business” (cited in Bekken, 2000).*

In New York, the notorious mafioso Lucky Luciano was employed for this purpose (Bekken, 1995, pp. 195). Interestingly, unsold papers were sometimes used as bedding by the often young, sometimes homeless newsboys of the turn of the century (DiGirolamo, 1997, pp. 129).

Second, newspapers tried to induce the newsboys to buy and sell more papers through other means, such as tournaments and prizes. Scott (1915, pp.189) mentions the use of “salesmanship contests”. Postol (1997a, pp. 172) describes prizes such as dinners, outings and trips, cash and merchandize, and states that the industry called these activities “boy welfare”. In 1934, *Editor & Publisher* commented thoroughly on the upcoming book, “How to Run Better Sales Contests”, by M. Zenn Kaufman Postol (1997a, pp. 185). Dedicating a whole chapter to such tournaments, Postol (1997a, pp. 186) states that “the variety of contest formats to spur boys on to greater productivity was endless. Nasaw (1985, pp.65) states: “turkeys and theater tickets were the preferred weapons in the newspaper’s war for the newsies”.

Third, it is possible that newsboys without return privileges exerted higher sales efforts or achieved higher sales. There are numerous references to the newsboys sales efforts, specially since the appearance of the yellow press. Nasaw (1985, pp. 77-86), describes how newsboys cried an “embellished” version of headlines, and details several selling techniques. Both

DiGirolamo (1997) and Postol (1997a) (1997b) make similar comments. For example, DiGirolamo (1997, pp. 291) shows the script of a song called “please buy my last paper”, that a newsgirl used to sing. Nasaw (1985, pp. 84) shows a picture of two kids working in teams: one was holding the bulk of the newspapers, and the other was about to enter a bar with just a few, to ask for people to buy his “last papers”. Since it has been described in the literature how sympathy and goodwill were exploited by children to increase sales, it is possible that potential customers would worry that the kids may have to “eat unsold papers” and decided to buy the “last” to help.

Fourth, it is also possible that newspapers may have simply hired more newsboys in response to double marginalization reducing the number bought per newsboy. This would make sense if it was possible for circulation managers to do this without increasing fixed costs. *Ceteris Paribus*, a circulation manager would prefer more newsboys ordering a reduced quantity without returns to less newsboys with return privileges since (1) making the newspaper see no unsold inventory created the illusion of higher circulation, (2) more newsboys could potentially exert more collective sales effort or cover a larger area, and (3) each newsboy would have less bargaining power over the newspaper. Although it is a fact that the number of newsboys exploded precisely around the time when the return privileges were eliminated<sup>xxiii</sup>, it is difficult to isolate the causes of this, since that period also included wars, an increase in urban population, increases in circulation, and the rise of the evening papers, which, being sold as single copies rather than by subscription, required more newsboys *per se*.

The suppression of return privileges was not always taken quietly by the newsboys. The newsboys created unions, went to strike and found other ways to protest, like refusing to carry a newspaper who did not accept returns. For example, in Seattle, 1918, some 300 of them joined

the *Newsboy Union*, and successfully negotiated a set of conditions that included (1) one street intersection per “owner”, (2) no decreases in margins, (3) the right to return newspapers for a full refund (Simpson, 1992). However, the union was later infiltrated by wholesalers and corner owners, and the newsboys, backed by a labor supported *Union Record*, attempted to break the *Union*’s power unsuccessfully (Simpson, 1992). In Chicago, in 1900, Hearst’s *Chicago American* entered the market by offering the newsboys a 60% margin and full return privileges, while the existing newspapers gave a 40% margin, non returnable. However, by 1909, the *American* was well entrenched in the market, and Hearst decided to move to his competitor’s terms (*i.e.* 40% and no returns). Some newsboys resisted by cutting the *American* altogether. The newspaper, however, resorted to violent means to break the newsboys’ resolve, and Hearst prevailed (Bekken, 2000). Later, the newsboys organized a union and went to strike with other newspaper workers in 1912. After some violence, and a couple of months, newsboys started quietly going back to work, despite the fact that the union had not called the strike off. Part of the problem was that the newsboys were considered “independent merchants”, and thus their right to strike was arguable both in the newspaper’s and the authorities’ eyes<sup>xxiv</sup>. As a consequence of the *Union*’s defeat in 1912, returns were not accepted in Chicago at least until the late 20’s. Unions were often only temporarily successful. In New York, the newsboys were successful in an 1893 strike, and returns were accepted for at least 13 years (Bekken, 1995, pp. 209). This did not last much longer: as late as 1939, contracts by the *Daily Argus* would not allow for returns (Bekken, 1995, pp. 203). Overall, according to Hardt and Brennen (1995, pp. 208), documented newsboy strikes have taken place in Boston (1901, 1908), Chicago (1912), Cleveland (1934), Des Moines (1922), Kansas City (1947), Lexington, Kentucky (1899), Minneapolis (1918), Mobile (1942), New York City (1893, 1899, 1918, 1922, 1941, 1948), Oakland (1928), Portland

(1914), Saint Louis (1945), and Seattle (1917)<sup>xxv</sup>. Despite the strikes, newspapers had the upper hand, and by the early years of the twentieth century most newspapers did not accept returns.

### 3.8 Return Privileges Become Dominant Again

It is nowadays almost universally true that returns are accepted at full price in the newspaper industry in the U.S.<sup>xxvi</sup> However, as we have seen this was not the case for a good part of the early 20<sup>th</sup> century. What was, then, the cause of this transformation?

The definite answer is, of course, elusive. However, we will identify here the events that were most influential on this transformation. First, the establishment of national brands, which began *circa* 1890 (Chandler,1990, pp. 63; Chandler,1977, pp. 315), increased advertising expenditures. As a result of the added advertising, the multi page format began its expansion precisely around that time (Lee, 1937 pp. 322). By 1920s, the average metropolitan newspaper with circulation above 100,000 averaged more than 20 pages, and the average Sunday paper with circulation above 100,000 averaged more than 100 pages (Lee, 1937 pp. 323). At the same time, advertising reached above 40% of total newspaper space, and an astounding 74+% of total revenue (Lee, 1937 pp. 324-25)<sup>xxvii</sup>. Another contracting novelty also was to play a key role in this story. In an effort to induce advertisers to pay more, newspapers started attempting to make circulation claims contractible. In 1873, *The New York Daily News*, which claimed the largest circulation in the US, started contracting for advertising on the following terms (Lee, 1937 pp. 340):

*Three (3) cents per line for every (10) ten thousand of our circulation. Every bill when presented to be accompanied with the sworn affidavit of the pressman who prints the paper, the clerk who delivers the paper, the cashier who receives the money. No paper to be counted as circulation except those that are actually sold*

*and paid for. Believing this to be the most fair and equitable plan ever offered to advertisers, we make the proposition.*

By 1886, rates per inch per thousand were standard. As a consequence, the publication of circulation figures began. George P. Rowell started, in 1869, the first consistently issued compilation of newspaper information, the *American Newspaper Directory*, which later merged with N. W. Ayer's *American Newspaper Annual* to form the *American Newspaper Annual and Directory* in 1909, a publication that continued until at least the late 1930s under the name *Directory of Newspapers and Periodicals* (Lee, 1937 pp. 339). The key issue was, of course, the accuracy of circulation reports. Rowell noted that less than 10 percent of newspapers could actually accurately calculate paid circulation (Thorn and Pfeil, 1987, pp. 61). Rowell's directory went as far as offering a 100 dollar reward for the finding of a lying report (Lee, 1937 pp. 341). Rowell, however, met with stiff opposition from newspapers. Numerous attempts by newspaper associations to set up auditing systems also failed. It was finally the advertisers who stepped up, forming the *Association of American Advertisers (AAA)* in 1899, as the "first national, no profit auditing body". The AAA immediately defined net paid circulation as "total circulation minus returned, unsold, and waste copies" (Thorn and Pfeil, 1987, pp. 61). Thus, returns were to be reported to the AAA. This ran into trouble, just as Rowell had. Within three years, fewer than 1 in 4 newspapers cooperated, and newspapers also wanted to play a role in the AAA policies. On the other hand, many advertisers wanted to "free ride" on the provision of information, making collections by the AAA very difficult. (Thorn and Pfeil, 1987, pp. 61; Lee, 1937 pp. 342).

Finally (and surprisingly), the law came into play. The US Postal Act of 1912 required every daily newspaper to publish and file a sworn statement of ownership, management, and circulation twice a year. This had little to do with the newspapers and advertisers quarrels. The

main motivation for such law was the fear that foreign countries, socialists or labor leaders might secretly gain control of the media (Thorn and Pfeil, 1987, pp. 62; Lee, 1937 pp. 342). When the Supreme Court upheld the law, the newspapers had little choice. In 1914, the *Audit Bureau of Circulation (ABC)* was formed as an organization that included advertisers and newspapers. Although the *ABC*'s 1914 constitution determined that the advertisers should remain in control, this was not without quarrel. Again, the newspapers wanted to present data without external audits, complained about bookkeeping costs, and the advertisers demanded better data, and pushed for more precise definitions of paid circulation. It took until 1935 to clarify all the rules and settle the major disputes (Lee, 1937 pp. 348). Today, the *ABC* still exists, sets all the standard circulation rules, and conducts audits. A 2005 report by the Newspaper Association of America states that 84% of all US newspapers have circulations audited by the *ABC*<sup>xxviii</sup>. Seven of the top ten newspapers are members of the *ABC*. This, however, does not exhaust the issues involved. For example, as recently as 2004, two scandals broke out (Miller, 2004): (1) *The Chicago Sun-Times* (a Hollinger paper) was forced to disclose that the paper had been significantly overstating its circulation figures for the past seven years, (2) the *Newsday* and the *Hoy* (both Tribune papers) also disclosed that they would significantly reduce its reported circulation. The *Chicago Tribune*, one of the papers implied, stated in an article (Miller, 2004):

### ***Buying Subscribers***

*Usually, that involves providing the distributor with a financial incentive, either via secret payments from a slush fund or some other method, to artificially suppress the number of returns. The industry calls that practice “buying subscribers” or “buying returns”. In the still unfolding Sun-Times case, for instance, Hollinger International has indicated that distributors or vendors were*

*encouraged to keep unsold papers rather than return them. (...) A Newsday employee who delivered papers to street hawkers was told to put out as many newspapers as you can and dump the rest (...) But any large-scale program to do so [suppress returns] requires substantial off-the-books funding, because the distributors or vendors will generally only forgo getting their money back from returns if they are paid to do so.*

Clearly, even in present times, returns have their drawbacks as well as advantages.

### **3.9 Decline of the Single Copy Sales**

Although, albeit with the help of some fortuitous government intervention and contracting innovations, newsboys seem to have won the war with publishers about returns, a number of factors begun to reduce the newsboys overall role in the industry.

First, Americans became more affluent and many moved to the suburbs. Consumers could now afford (and likely preferred) subscriptions over single copy sales. Postol (1997) states:

*While it is clearly useful to chronicle the economic exploitation of urban street traders, it is essential to recognize that by the New Deal [1933] 70% of the juvenile workers in newspaper circulation were route carriers.*

Second, social concern grew as standards of moral behavior increased. Various organizations looking for a cause often focused on how the newsboy practice was shaping the country's next generation. In 1929 the New York Times published an article actually entitled "The Newsboy Problem" that provides a good example of what progressing America thought of the little merchants. The article claims that every major big city newspaper had hawkers and that those hawkers were belligerent and cruel and ready for a fight. The concern was common and widespread. Thorn and Pfeil (1987, pp. 51) state:

*From 1850 to World War II, social reformers periodically focused their attention on ridding the streets and newspapers of newsboys and at times threatened the whole youth carrier system. The Penny Press system created a newsboy, a ragged, filthy, foul-mouthed youth who earned money the hard way—by being tough and streetwise. Far from the middle-class ideal, newsboys mixed with streetwise adults; and more than a few became gamblers and criminals.*

Third, as explained above, circulation accuracy came into question as papers were discovered cheating the system (a practice that, as will be described later, still occurs). Single copy sales were found to be a primary tool for fudging the numbers. Additionally, as advertisers gained power they began to demand more detailed demographic information about newspaper readers, which newspapers could not provide if they did not know who was buying their paper. This also impacted ownership of subscriber lists. By 2005, 97.8% of newspapers bill subscribers directly and thus control such lists.

Fourth, boys could no longer physically deliver the paper. A push for earlier delivery of papers proved dangerous as boys had to deliver before school, often at dawn. Papers also grew and it simply became impossible for a young boy to carry more than a couple of papers, Berman (2004). Larger papers and spread out populations required cars and that required adults. Moreover, the increase in inserts led to the use of regional distribution centers making it virtually impossible for a kid on a bike to participate, Hardt and Brennen (1995, pp. 213). This change in delivery patterns may have influenced the viability of keeping a “hawker force”, and thus the prevalence of single copy sales.

### **3.10 Current Practices**

American newspapers make up a sixty billion dollar industry, most of which comes from advertising, Datamonitor (2003, 2004). In 2003, advertising represented seventy-six percent of total revenue and just two years later that grew to over eighty percent, Datamonitor (2003, 2004). Seventeen percent of all newspapers sold in the US are single copy (25.6% on Sundays), the rest being sold by subscription (NAA 2005). Eighty seven percent of single copy sales points are operated by distributors (which include over the counter sales at stores and newsrack sales) and only thirteen percent are “hawkers”, as the industry often refers to literal newsboys (NAA 2005). However, less than one percent of total sales are done by “hawkers”. Adults now make up over eighty percent of the carrier/newsvendor force with larger papers barely using children at all; papers with more than 400,000 in distribution use a 99.8% adult workforce for circulation (NAA 2005).

From the above figures, it can be concluded that the literal newsboy is essentially extinct, either because there are not many “hawkers” anymore, or because the deliveries/sales are done by adults. This does not mean that there are no scandals behind the young carriers/newsboys anymore. For example, in 1998, a young carrier sued the *Contra Costa Times* for forcing boys/girls to continue delivering to delinquent subscribers and not paying them for it, despite the fact that the paper claimed that the carriers were independent contractors, Goodyear (1998).

While the use of actual newsboys has diminished considerably, many other entities at the end of the newspaper supply chain still face the newsboy problem, which include newsrack operators, stores where papers are sold over the counter, and others. We asked John Murray, V.P. of Circulation and Marketing, of the Newspaper Association of America about the distribution of these sales and the current relevance of the newsboy problem:

*The "retailers", grocery stores (largest Sunday sales channel) and convenience stores (largest Mon-Sat sales channel) buy at a wholesale rate from either the newspaper or its distributors and have full returns privileges. Returns run from 15 to 20%. Coin operated news racks account for about 35% of daily sales and less than 25% of Sunday sales. In some cases... the newspaper services the news racks using its own employees, thus making the newspaper the retailer at the coin operated news racks and the direct wholesaler to the grocery convenience store, Starbucks etc. (edited for length)*

According to official NAA numbers, the median paper sells for \$ 0.5 (Sundays, \$ 1.5); the median commission (piece rate) paid to agents who sell single copies (includes hawkers, stores, and others) is \$ 0.13 (Sundays \$0.27); and the median percentage of stocked out days is 19% of the days (Sundays, same number).

The existence of such high stockout rates in the presence of full return privileges merits some comment. An informal survey of circulation managers revealed that it is mostly the *newspapers* and not the *points of sale* who determine stocking quantities. This, however, does not exhaust the question. For example, at one of the largest US newspapers which is a leader in single copy sales, the following cycles would occur: the newspapers would take over decision rights over quantities stocked by the points of sale. Some points of sale (specially stores) would resist this and request less newspapers (despite being allowed full return privileges). The paper would allow protesting POS to set their own stocking quantities. After a while, the paper would attempt to regain control, restarting the cycle. This behavior is not explained by the extant literature. It may be that the stores are subject to space restrictions and papers occupy a large space relative to dollars produced, or that store prefer to stock out more often because margins

on newspaper sales are not very big. The papers, in turn, prefer more papers because they sell more advertising with more circulation. Some store managers argued that they were charged by the amount of garbage generated by their store, and thus would rather reduce returns<sup>xxix</sup> and loose sales than have to throw away papers and pay the price. In any case, the simple newsboy problem clearly does not reflect the actual situation that newsboys face (else, a lot less stockouts would be present given that full returns are accepted).

#### 4. Conclusions

In this paper, we have visited both the history of the newsboy problem in the OR/OM lit, and of real newsboy contracts. On the academic side, it is fairly clear that the newsboy problem—developed during World War II by military researchers—was not developed as a consequence of a study of real newsboys, that newsboys were not the target users of it, and that the problem was therefore named for the metaphor and not the industry.<sup>xxx</sup> We have, however, used the model extensively in the belief that it described real world trade offs reasonably well. Partly for this reason, the model has been given other names, described in many ways, and used for numerous purposes. Finding a place in multiple academic disciplines, it has become known as a simple, elegant example of a balancing decision in a variable environment based on available information. Its use is particularly prevalent in the supply chain contracting literature. Many of the supply chain contracting literature’s conclusions and insights, are, however subject to a big *caveat*: before we know what can be explained by our models and what can not, deeper understanding of the forces that shape real life contracts is needed. By focusing on the history of the simplest and most emblematic of such contracts in real terms, this paper is a first step in that direction. In our study, we found that the present shape of the newsboy contract evolved over time in non linear, often unexpected ways. Apprentices became newsboys and newsboys became

stands in grocery stores and coffee shops. Salaries were first paid and then taken away. Fees were sometimes charged by newspaper distributing companies to newspapers, and by corner owners and distributors to newsboys. Returns were first accepted, then not, then accepted again. Stocking decisions were sometimes made by the newsboys, sometimes by the newspaper.

All things set aside, Pasternack (1985) showed that none of these relationships were mathematically optimal for the supply chain under standard newsboy assumptions. In the end, rather than supply chain optimality, it was a collection of legal (e.g. the US Postal Act of 1912), technological (e.g. new printing technology which made the *penny press* viable), contractual (e.g. charging for advertising per inch per thousand paper sold), social (e.g. hawking newspapers became respectable again after the war of independence) and economic (e.g. the consolidation of distributors first, and newspapers then) changes that shaped the newsboy contract over the years. We hope that, in the future, new and better models will arise from a richer interaction with reality, and a better understanding of historic events.

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## Notes

<sup>i</sup> Quoted in DiGirolamo (1997).

<sup>ii</sup> Although the word originated in England in the 18<sup>th</sup> century (DiGirolamo, 1997, pp. 23), it became common use in the US by the 19<sup>th</sup> century. In the US newspaper industry jargon, a newsboy and a newsvendor are not necessarily the same thing. The former is a young individual who sells single copy newspapers, the latter could sometimes be a newsstand or POS, but not necessarily a person, although the term may refer to the adult operating the POS. A newsvendor could also be an intermediary who buys from newspapers and sells to the actual newsboys/girls. In modern industry jargon, a physical person who sells single copy papers on the street is called a hawker. To avoid confusion, unless stated otherwise, in this article we will indistinctly refer to either a POS, a newsstand, boys, girls, men or women who sell single copy papers as “newsboys”, and will clarify as necessary. In any case, the profession was predominantly male for many years. For example, in 1920, the US Census reported only 193 girls among the 20,706 newsboys/carriers. Even in 1980 it was reported that no more than 20% of New York carriers were female (Linder, 1990).

<sup>iii</sup> Phillip M. Morse, an MIT professor, served as head of the U.S. Navy’s Anti-Submarine Warfare Operations Research Group, and was the first president of the Operations Research Society of America, which was the first publisher of the *Operations Research* journal.

<sup>iv</sup> The problems illustrated in this book include submarine patrols, area bombardment, depth bomb settings, etc.

<sup>v</sup> Sir Roger L’Estrange, founder of the Public Intelligencer in 1663, was strongly opposed to Butters selling tactics, accusing the sellers of also engaging “in treasonous and seditious libels”, and of dispersing news “against either Church or State” (Hudson, 1873, pp. XXXIV). However, it is important to note that L’Estrange’s newspaper had inherited the rights granted to a Henry Muddiman in 1660, who had owned the only two official newspapers (all other papers were declared illegal), and had been awarded free postage for life. Thus, L’Estrange had no need for newsboys. It is known that Muddiman used the mail to distribute his papers (for free), and charged 5 pounds a year for a subscription (Williams 1977, pp. 13). In any case, L’Estrange’s refusal to employ newsboys may genuinely be related to their “dishonorable”, “shady image”.

<sup>vi</sup> Advertisement revenues became relevant for newsvendor contracts much later, circa 1880s.

<sup>vii</sup> Repression on the independence of colonial papers continued until the libel trial of John Peter Zenger in 1735.

<sup>viii</sup> A *newspaper carrier* delivers subscriptions, and a *newsboy* sells single copies. Because of our interest in the newsboy problem in OR/OM, we will mostly focus here on the latter. However, sometimes the same person would do both things, making it hard to separate issues.

<sup>ix</sup> Although Thomas, 1810, calls the newsboy *Lawrence Sweeney*, Hudson, 1873, who references Thomas, 1810, called the newsboy *Samuel Sweeney*, and so does Lee, 1937, and most later references, for example Thorn and Pfeil, 1987. Although Thomas has occasionally been found to be erroneous, we have no reason to believe he is wrong in this, and thus decided to stay with the earliest reference, specially given that the later version of Thomas’ work revised for accuracy by the American Antiquarian Society also calls the hawker *Lawrence Sweeney*.

<sup>x</sup> The price stayed at one penny for thirty years, but the name remained a lot longer (Hudson, 1873, pp. 418).

<sup>xi</sup> Although, strictly speaking, many newspapers outside major eastern cities were weekly, not daily newspapers (Nerone, 1987).

<sup>xii</sup> For more on L’Estrange, see endnote 5.

<sup>xiii</sup> Interestingly, this practice still happens today. Some papers charge subscriptions to carriers irrespective of whether carriers are able to collect from customers.

<sup>xiv</sup> For a thorough study about property rights of Seattle corners in the first third of the 20<sup>th</sup> century, see Simpson (1992). Bekken (2000) also mentions corner owning and selling by dealers and newsboys.

<sup>xv</sup> Day’s success may also be attributed to new printing technology, which made selling papers for a penny both physically and economically feasible. In particular, American manufacturer R. Hoe and Co. offered, in 1832, a two cylinder press that could print 4,000 copies per hour (Thorn and Pfeil, 1987 pp. 43)

<sup>xvi</sup> It is interesting to note that, given the dealer’s powers, and the existence of bonuses, or lump-sum money transfers, the dealers could have accepted lower retail prices in exchange for higher bonuses. This, however, did not happen.

<sup>xvii</sup> For evidence of this, see Section 3.8.

<sup>xviii</sup> A practice started in 1873, see Section 3.8

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<sup>xix</sup> The question of whether newspapers have the right to set retail prices went much later to the US Supreme Court. In *Albrecht v Herald* (1968), the court ruled that the papers did not have such right, allowing *Albrecht*, a newspaper wholesaler, to charge a price above the one advertised by the *Herald*. This ruling, was conditioned in 1997 by another supreme court ruling, *State Oil Co vs Khan*, but mostly stands (see for example Coughland et al, 2001, pp. 357). Yet, this issue is less than settled, and disputes are frequent, even today. For example, Jones (1989), describes how *The Times* would provide seven day delivery for \$4.25 a week, while some wholesalers would charge \$6, \$7 and even more, a factor in *The Times*' decision to increase its direct distribution business. Similarly, Goodyear (1998), describes how the *Contra Costa Times* newsboys sued the paper for not telling the newsboys that they could choose the price at which to sell the newspaper.

<sup>xx</sup> This was apparently an international phenomenon. For a study of collusion in the Canadian Newspaper industry, see Sotiron, 1992.

<sup>xxi</sup> Although most of these episodes are a thing of the past now, in private conversations with a prominent newspaper distribution manager in one of the US's largest cities, we learned that it is rumored that the mafia has to this day control of many newspaper distribution businesses in that city.

<sup>xxii</sup> Carrier situation in the city of New York may have been different, at least for some papers. Jones (1989), of the *New York Times*, stated that out of a total of 340,000 home delivery customers in the New York area, independent dealers delivered 130,000 of them. However, the article also mentioned that (1) the *Times* was increasing its direct deliveries, and (2) "many other papers, including *The Washington Post*, and *The Baltimore Sun*, eliminated their independent dealer networks and converted the dealers into employees". Interestingly, the decision by *The Times* to distribute more papers directly was also challenged in court, and, again, the courts ruled for the newspaper.

<sup>xxiii</sup> For a number of examples, see Lee, (1937 pp. 289).

<sup>xxiv</sup> This was later used as an argument to avoid having to pay minimum wages, insurance and social security, and the child labor reform in the 30's, which prevented child labor in most other conditions. For carriers, the argument still goes on today. Interestingly, accepting returns may change the newsboys legal status, because one criteria to differentiate wage earners from contractors is the legal idea that independent contractors bear the risk of over/under stocking, while employees not. See Linder (1990), Trattner (1970), Felt (1965), and Seitz 81945). In 1996, President Clinton signed a new Minimum Wager Bill identifying newspaper carriers and distributors as independent sellers (Lewthwaite, 1996).

<sup>xxv</sup> Nevertheless, resistance to the elimination of the return privilege itself may not have been the only reaction by the newsboys and dealers. Lee, (1937 pp. 265), citing an 1885 article, claims that such elimination made newsboys and dealers oppose the introduction of new newspapers, because the less the number of the newspapers, the lower the variance of demand, and the lower the chance of overstocking, claiming that "a few sheets have more stable following than many". This argument, however, is not definite. Bekken (1995; 2000) illustrates how the introduction of new newspapers often allowed newsboys to play one paper against the other and offered the chance to regain margins and return privileges. In essence, the less newspapers, the more bargaining power or the papers over the newsboys.

<sup>xxvi</sup> This seems to be true World Wide, although we only have anecdotal evidence.

<sup>xxvii</sup> A trend that continues into our days. For example, Thorn and Pfeil (1987, pp. 45), state that "newspapers receive approximately 80% of revenues from advertising, compared with 20% from circulation".

<sup>xxviii</sup> Accepting returns is now a requisite for ABC auditing.

<sup>xxix</sup> Note that many papers do not collect actual unsold newspapers but rather accept a tear up of the first page in exchange.

<sup>xxx</sup> Interestingly, the more research published on the newsboy problem, the fewer newsboys there are to benefit from it.

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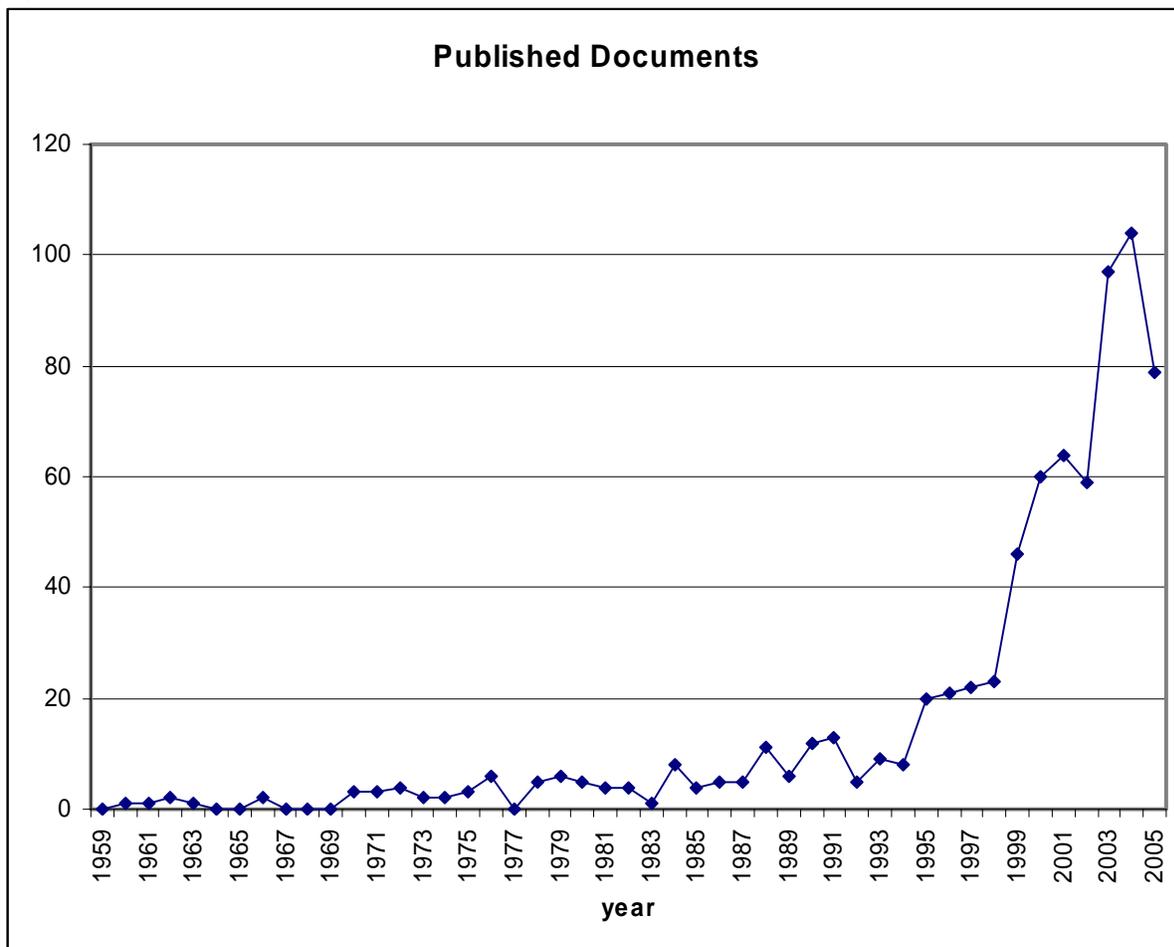
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## Appendix

Figure 1



Data assembled from searches (on JSTOR, Lexis, EBSCO, Google Scholar etc.) for peer-reviewed papers, published theses, and books containing "newsboy" and/or "news vendor."