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COUNTERFEIT DRUGS: A GLOBAL CONSUMER PERSPECTIVE

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I. INTRODUCTION

The proliferation of counterfeit medicines is one of the most pressing issues facing the pharmaceutical industry.[1] The sale of fake drugs accounts for an estimated $512 billion in global sales each year, constituting 5% to 7% of total international trade.[2] According to one source, manufacturing of fake medicines "will grow by an average of 13% annually through 2010."[3] Sales at that point "will generate $75 billion in revenue and represent 15% of the size of the legitimate industry."[4] Consequently, sales of counterfeit drugs deny revenue to legitimate manufacturers who must recoup the expensive research and cost of developing new medicines.

Company profits are not the only casualty. There are numerous reports of injuries and deaths arising from the ingestion of fake medicines. According to the World Health Organization, counterfeits purportedly treating AIDS, bacterial infections, cancer, fungal infections, high cholesterol, tuberculosis and a host of other

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[1] Amy M. Bunker, *Deadly Dose: Counterfeit Pharmaceuticals, Intellectual Property and Human Health*, 89 J. PAT. & TRADEMARK OFF. SOC'Y 493, 494 (2007).

[2] Maria Nelson, Michelle Vizurraga & David Chang, *Counterfeit Pharmaceuticals: A Worldwide Problem*, 96 TRADEMARK REP. 1068, 1068 (2006).

[3] *Id.*

[4] *Id.*

illnesses have entered the market.[5] For example, in Nigeria, over one hundred children died from taking a cough mixture diluted with a poisonous solvent.[6] In Haiti, eighty children died after ingesting a medicine tainted with ethylene glycol, an ingredient in antifreeze.[7] A Chinese counterfeit manufacturer in Guanxi province produced a traditional Chinese medicine laced with an expired antibiotic.[8] The medicine poisoned seventy people and left one person in a coma.[9] Other examples of harmful counterfeits include fake inhalers manufactured for pediatric cystic fibrosis and injected cancer drugs consisting only of tap water.[10]

Much has been written about the problems of pharmaceutical counterfeits. Common topics include inadequate laws, lack of enforcement, and the absence of criminal penalties for counterfeiters. Understanding these issues plays an important role in understanding how the supply side of fake drugs can be curtailed through a combination of governmental and industry actions.

Less has been written in the legal literature, however, about the demand side of pharmaceuticals. Consumers remain both the root problem and the ultimate destination of counterfeit products. [11] A substantial portion of counterfeit losses can be traced to willing purchases by consumers.[12] Understanding under what temporal, economic, social, and psychological conditions individuals purchase counterfeit medicines is essential to understanding the underlying determinants of demand.[13] This understanding can assist pharmaceutical firms and policymakers to better address consumer needs and ultimately reduce the preference for these potentially

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[5] Bunker, *supra* note 1, at 496.
[6] *Id.* at 497.
[7] *Id.*
[8] Trish Saywell & Joanne McManus, *What's in that Pill?*, FAR E. ECON. REV., Feb. 21, 2002, at 34.
[9] *Id.*
[10] Bryan A. Liang, *Fade to Black: Importation and Counterfeit Drugs*, 32 AM. J.L. & MED. 279, 285 (2006).
[11] *E.g.*, Boonghee Yoo & Seung-Hee Lee, *The Buyers of Counterfeit Products in South Korea*, 3 J. INT'L BUS. & L. 95, 96-97 (2004) ("The consumer need for counterfeits are the fundamental roots and the ultimate destination for counterfeiting. Without them, as we see it today, counterfeiting cannot exist or succeed. Understanding counterfeit consumers is imperative to formulate more effective anti-counterfeiting operations.").
[12] Alexander Nill & Clifford J. Schultz II, *The Scourge of Global Counterfeiting*, 39 BUS. HORIZONS 37, 37 (1996).
[13] *E.g.*, Celso Augusto de Matos, Cristiana Trindade Ituassu & Carlos Alberto Vargas Rossi, *Consumer Attitudes Toward Counterfeits: A Review and Extension*, 24 J. CONSUMER MARKETING 36 (2007).

dangerous remedies. The purpose of this article is to present a brief discussion of consumer behavior toward counterfeit drugs.

II. UNDERSTANDING THE CONSUMER OF COUNTERFEIT MEDICINES: ATTITUDES AND STRATEGIES

The scope of the global problem of counterfeit drugs has already been discussed widely in legal literature.[14] The World Health Organization estimates that up to 60% of drugs sold in developing countries and up to 20% sold in developed countries are counterfeit.[15] These statistics appear to show that non-governmental organizations understand the scope of the problem. Estimates from researchers range wildly, from between 1% and 50%, with estimates of 40%, 30%, 17%, and 10% in between.[16] Size estimates of the fake drug market range between $16 billion and $48 billion in annual sales.[17] In addition to cutting into sales, these fake drugs also damage the original drug's brand equity, although specific losses are difficult to define.[18]

There is little doubt of the potential harms, though reports vary widely and some are truly staggering. A study in the Philippines revealed that 8% of medicines purchased at drug retailers were fakes, ranging from anti-inflammatory drugs to drugs that purportedly helped with cardiovascular problems and infectious diseases.[19] In Cambodia, Laos, Thailand, Vietnam, and Burma, the lack of an active ingredient has been found in more than one-third of the anti-malarial compounds

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[14] Recent discussions of the counterfeit drug problem include: Suchira Ghosh, *The R.F.I.D. Act of 2006 and E-Pedigrees: Tackling the Problem of Counterfeit Drugs in the United States Wholesale Industry*, 13 MICH. TELECOMM. & TECH. L. REV. 577 (2007), Jim Himbolt, *Counterfeit Medicines Outside the United States: Challenges and Opportunities*, 878 PLI/PAT 869 (2006), Randall Lutter & Margaret Glavin, *FDA Counterfeit Drug Task Force Report: 2006 Update*, 25 BIOTECHNOLOGY L. REPORT 434 (2006), and Donald deKieffer, *Trojan Drugs: Counterfeit and Mislabeled Pharmaceuticals in the Legitimate Market*, 32 AM. J.L. & MED. 325 (2006).

[15] Liang, *supra* note 10, at 281.

[16] WORLD HEALTH ORGANIZATION, COMBATING COUNTERFEIT DRUGS: A CONCEPT PAPER FOR EFFECTIVE INTERNATIONAL COOPERATION 3 (2006), *available at* http://www.who.int/medicines/events/FINALBACKPAPER.pdf.

[17] Saywell & McManus, *supra* note 8, at 34.

[18] Nicholas D. Cappiello, *Counterfeit-Resistant Technology: An Essential Investment to Protect Consumers and to Avoid Liability*, 2 J. HEALTH & BIOMEDICAL L. 277, 283 (2006). *See generally* Ricky Wilke & Judith Lynne Zaichkowsky, *Brand Imitation and its Effects on Innovation, Competition, and Brand Equity*, 6 BUS. HORIZONS 9 (1999).

[19] Saywell & McManus, *supra* note 8, at 36.

sold.[20] A 1987 Nigerian study found that an astounding 70% of drugs in that country were fake.[21] In Niger, approximately three hundred villagers died when doctors inadvertently administered a vaccine in response to a meningitis outbreak that consisted primarily of saltwater.[22] An estimated 192,000 patients were killed in China from fake drug use in 2001 alone.[23] These deaths occurred in the very same year Chinese authorities investigated 480,000 incidents of counterfeit drugs. Consequently, Chinese authorities closed approximately 1,300 factories.[24] Clearly, counterfeit drugs are a rampant and dangerous problem.

A. Determinants of Attitude and Consumption

Marketing scholars have expressed concern over the insufficient research available examining the patterns of counterfeit-buying consumers.[25] Within that literature virtually no research exists that addresses the attitudes and behaviors of consumers towards counterfeit medicines. A canvas of the literature reveals that thirty separate studies in twenty-eight articles address the subject of counterfeit purchasers.[26] These studies, ranging from 1993 to 2006,

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[20] Merri C. Moken, *Fake Pharmaceuticals: How They and Relevant Legislation or Lack Thereof Contribute to Consistently High and Increasing Drug Prices*, 29 AM. J.L. & MED. 525, 528 (2003).
[21] Douglas W. Stearn, *Deterring the Importation of Counterfeit Pharmaceutical Products*, 59 FOOD & DRUG L.J. 537, 540 (2004) (citing Toye Olori, *Nigeria-Health: Bogus Drugs--A National Headache*, INT'L PRESS SERV., Dec. 5, 1996).
[22] *Id.*
[23] Robert Cockburn et al., *The Global Threat of Counterfeit Drugs: Why Industry and Governments Must Communicate the Dangers*, 2(4) PLOS MED. 302, 302 (Apr. 2005), *available at* http://medicine.plosjournals.org/archive/1549-1676/2/4/pdf/10.1371_journal.pmed.0020100-S.pdf.
[24] *Id.* at 303.
[25] *E.g.*, Elfriede Penz & Barbara Stottinger, *Forget the "Real" Thing—Take the Copy! An Explanatory Model for the Volitional Purchase of Counterfeit Products*, 32 ADVANCES IN CONSUMER RESEARCH 568, 568 (2005) ("The academic literature displays a strong focus on the supply side, while the demand side–why consumers buy fake products–was neglected badly."); Gail Tom et al., *Consumer Demand for Counterfeit Goods*, 15 PSYCHOL. & MARKETING 405, 406 (1998) ("The majority of the research on counterfeiting has focused attention on the supply side with scant research addressing the demand side of counterfeiting.").
[26] Martin Eisend & Pakise Schuchert-Güler, *Explaining Counterfeit Purchases: A Review and Preview*, 12 ACAD. MARKETING SCI. REV. 1, 5-12 (2006). The authors were careful to state that they could not guarantee that their literature survey was exhaustive. *Id.* at 2-3 ("Although we can not guarantee a full coverage of all studies performed so far, it is hoped that this procedure will provide a systematic literature review.").

consisted mostly of consumer surveys hailing from a variety of nations such as Singapore, Taiwan, Austria, China, and the United States.[27]

Of all the studies listed, only one addressed consumer perceptions towards the purchase of a counterfeit pharmaceutical drug.[28] The authors in that study surveyed 144 American graduate students, presenting them with a scenario regarding the purchase of a probable counterfeit Tylenol product.[29] Based on the scenario, participants were asked about the likelihood of buying the presented products and other criteria such as perceived risks, perceived product attributes, and awareness of societal consequences.[30] The study found, among other things, that perceived legal risk, social risk, or societal consequences did not influence the purchase intent of counterfeit goods by the participants.[31]

Each product seemed to generate its own predictor variable of consumer willingness to purchase the fake. For Ray Ban sunglasses, shopping environment and perceived product attributes influenced the counterfeit purchase decision.[32] The authors thus suggested that an anti-counterfeiting campaign should discredit the counterfeit shopping environment and the inferior characteristics of the product.[33] A specific example might include portraying a fake purchase on a dingy street corner table or an unsafe back alley, the result being a purchased product that lacks UV protection or other styling characteristics of the legitimate good.

As opposed to consumer goods, potential purchasers of the counterfeit Tylenol product were influenced by the perceived

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[27] *Id.* at 3-12.

[28] Birgit Leisen & Alexander Nill, *Combating Product Counterfeiting: An Investigation into the Likely Effectiveness of a Demand-Oriented Approach*, 2001 AM. MARKETING ASS'N WINTER EDUCATORS' CONF., 12 MARKETING THEORY & APPLICATIONS 271 (2001).

[29] The authors provided the following scenario to study participants: "Imagine you are shopping in some store in a city in Mexico. You have been told by somebody reliable that this store only sells counterfeit products. Remember, the products look like the original brand. However, they are not manufactured by the company producing the original good and the names and logos have been used without their permission. Within the store's assortment you find the following product: The product is contained in a small white bottle with a red cap. The label indicates that the product is a pain reliever and a fewer [sic] reducer. The product has a *TYLENOL* label and logo and costs $1." *Id.* at 274. Participants were given similar scenarios for Ray Ban sunglasses and Rolex watches, which were the other products tested in the study. *Id.*

[30] *Id.*

[31] *Id.* at 274-75.

[32] *Id.* at 275.

[33] *Id.*

performance risk of the product.[34] This would trigger the obvious campaign highlighting the potential ill effects of taking the counterfeit drug.[35] However, shopping environment and perceived product attributes did not significantly impact the propensity of the participants to purchase the product.

Although this study sheds light on the importance of tailoring any anti-counterfeit campaign toward the attributes of the product and its purchase environment, the study may have limited projectability to a global perspective on medicines. Graduate MBA students at a university in the American Southwest probably have significantly different perceptions towards counterfeit medicines than citizens of a developing country. Further complicating projectability is the medicine examined, Tylenol. Tylenol is a frequently counterfeited drug and it may represent a range of analgesics commonly purchased worldwide.[36] Tylenol, however, is hardly representative of counterfeit drugs purchased that may have life-saving or life-altering effects. Therefore even this important research is not perfectly representative of global pharmaceuticals.

This does not mean, however, that the emerging literature on consumer behavior towards counterfeit products is wholly inapplicable. The available marketing literature examines consumer behavior with a precision and empirical rigor rarely seen in traditional law reviews. Although the sheer numbers of publications may not match related marketing fields, the results reveal a useful understanding of how consumers think about fakes and what precipitates them to act in purchasing them.

Publications in this field generally focus on non-deceptive counterfeiting, the knowing and intentional purchase of fake products by consumers.[37] Deceptive counterfeits, by contrast, are purchased by consumers who are not aware that the item bought is not the original product. Non-deceptive counterfeiting thrives on the notion that the purpose of counterfeits is not to defraud consumers, but to satisfy unmet needs.[38]

The most obvious determinant of whether counterfeit drugs are purchased is price. Counterfeiters hold an obvious advantage over legitimate producers in that counterfeit producers do not have to

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[34] *Id.*
[35] *Id.*
[36] *Id.*
[37] Penz & Stottinger, *supra* note 25, at 568. *See also* Gene M. Grossman & Carl Shapiro, *Foreign Counterfeiting of Status Goods*, 103 Q.J. ECON. 79 (1988).
[38] Rolando Arellano, *Informal-Underground Retailers in Less-Developed Countries: An Exploratory Research from a Marketing Point of View*, 14 J. MACROMARKETING 21, 33 (1994).

subscribe to the same quality as legitimate companies, do not need to engage in new product development, and can simply "free ride" off of established brands.[39] A quick glance at the topic could lead one to conclude that price is the sole determinant of purchasing decisions and that little more need be discussed.[40]

The lower price of counterfeits is of course a significant factor influencing purchase. Focusing solely on that determinant, however, inhibits the ability of drug companies to alleviate the problem. Some industries, such as those that produce music and movies, just might be able to compete with counterfeit sellers through mass digital distribution and the bundling of music for a single low price.[41] As the CEO of Emusic, Inc. remarked, "[w]e think the best way to stop piracy is to make music so cheap it isn't worth copying."[42] The research-intensive and tangible nature of the medicinal product makes such ambitions for the pharmaceutical enterprise impracticable. Given the significant research and production costs, it is unlikely that legitimate producers will ever be able to compete on price with counterfeit medicines.[43] Price controls would impair profitability and would likely not eliminate counterfeit producers.[44] Price competition, therefore, is the one criterion under which legitimate pharmaceutical enterprises cannot easily compete successfully.

Emphasis then must shift to non-price determinants, and this emphasis (with price being only one of many factors) is the predominant focus of most consumer behavior research. One relevant study is by Wee, Tan, and Cheok, who offered a self-administered questionnaire to 949 consumers in an "industrialized island state in South-East Asia" regarding the purchase of a variety of counterfeit

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[39] Natasha Wong, *Counterfeit Medicine: Is it Curing China?*, 5 ASIAN-PAC. L. & POL'Y J. 155, 171 (2004) ("[The counterfeit pharmaceutical distributor] will make a substantial profit based upon his non-existent research and development, lack of advertising costs, and dependence upon the public's trust of the name brand's product reputation, which he is taking advantage of with counterfeit goods."). *See also* Saywell & McManus, *supra* note 8, at 37 ("Counterfeiters can make fakes for 80% less than what it costs legitimate manufacturers.").

[40] Eisend & Schuchert-Güler, *supra* note 26, at 1.

[41] Peter K. Yu, *The Escalating Copyright Wars*, 32 HOFSTRA L. REV. 907, 947-48 (2004).

[42] *Id.* (citing COMMITTEE ON INTELLECTUAL PROP. RIGHTS AND THE EMERGING INFO. INFRASTRUCTURE, NAT'L RESEARCH COUNCIL, THE DIGITAL DILEMMA: INTELLECTUAL PROPERTY IN THE INFORMATION AGE (2000)).

[43] Bunker, *supra* note 1, at 505 (noting that production of counterfeit drugs will always be cheaper than production of authentic medicines).

[44] *Id.*

products.[45] The study found that product attributes of appearance, image, purpose, and perceived quality dominate the consumer's intention to purchase.[46] The study also found that education level has a mixed correlation. Education level correlates positively with the purchase of counterfeit literature and software, but negatively with the purchase of fashion-related items such as leather products and watches.[47] The impact of attitudes towards fake products varied with one exception—attitude towards counterfeiting. The study found that the negative perception towards counterfeiting consistently impacted the intention to purchase counterfeits across all products.[48]

This last finding, that attitude towards counterfeiting affects purchase intentions, may seem unsurprising. Yet, this finding reveals that counterfeiting can be curtailed through what marketers and marketing campaigns do best—changing consumers' behavior through shaping attitudes and beliefs.[49] This implies that drug company marketing and education is not wholly futile. Such campaigns can at least have some effect on consumers' attitudes, and therefore their purchase intention, towards fake drugs. Education efforts may include teaching consumers how to spot a fake, publishing a list of legitimate distributors, and offering warranties, guarantees, or other after-sale services.[50] These solutions are not new revelations, and no doubt companies in various industries have employed them. The study, however, informs us that efforts to change attitude can have an appreciable effect towards counterfeit buying behaviors across products. That finding may well translate into changing perceptions toward medicines.

This study also exposes the limitations of non-pharmaceutical consumer research. Drugs tend to be functional rather than convenience goods and thus buyers may be less swayed by non-price attributes. Furthermore, drugs are neither public nor status-conveying products, and this may influence consumer receptiveness towards buying counterfeit versions.[51] Many goods convey prestige, status,

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[45] Chow-Hou Wee, Soo-Jiuan Tan & Kim-Hong Cheok, *Non-Price Determinants of Intention to Purchase Counterfeit Goods*, 12 INT'L MARKETING REV. 19, 26-27 (1995).
[46] *Id.* at 39.
[47] *Id.* at 39-40.
[48] *Id.* at 40.
[49] *Id.*
[50] *Id.* at 41. *See also* Kate Colpitts Hunter, *Here There be Pirates: How China is Meeting its IP Enforcement Obligations Under TRIPS*, 8 SAN DIEGO INT'L L.J. 523, 555 (2007) (noting some of these solutions).
[51] *See* Sindy Chapa, Michael S. Minor & Celia Maldonado, *Product Category and Origin Effects on Consumer Responses to Counterfeits: Comparing Mexico and the U.S.*, 18 J. INT'L CONSUMER MARKETING 79, 79 (2006) (finding that consumer

and exclusivity, and consumers will pay a premium to purchase those attributes. It is unlikely that consumers purchase a given pharmaceutical to convey a prestige messages to people around them. Therefore, consumer attitudes toward counterfeit fashion-susceptible items may be embodied with preferences not present in drug purchases.

Another survey revealed that consumers express different reasons for buying counterfeit or legitimate products according to the perceived similarity of the legitimate product with the counterfeit.[52] One consumer segment may perceive counterfeit and legitimate products as having high-parity, meaning the products are perceived to possess comparable attributes.[53] Another consumer segment may perceive low-parity in counterfeit and legitimate products, meaning that the consumer rates counterfeit products as inferior to the legitimate version in one or more attributes.[54]

The survey revealed that high-parity consumers who prefer counterfeits view themselves as "sly shoppers" who buy fake products comparable to legitimate ones, but at bargain prices.[55] High-parity, legitimate-good preferring consumers tended to view themselves as ethical shoppers unwilling to condone illegal activity.[56] These shoppers reported preferring legitimate compact discs to counterfeit ones even though the fake compact disc was comparable in all attributes and superior in price.[57]

Consumers perceiving low parity between legitimate and counterfeit goods preferred counterfeit goods out of economic necessity and preferred legitimate goods because of risk aversion.[58]

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responses toward counterfeits are more favorable for public products than those consumed in private).

[52] *See* Tom et al., *supra* note 25, at 405.

[53] *Id.* at 414.

[54] *Id.* at 415.

[55] *Id.* at 414. The authors elicited this perception by asking respondents to evaluate the following responses, "[b]uying counterfeit products demonstrates that I am a wise shopper," "[c]ounterfeit products are just as good as designer products," and "I would buy counterfeit products even if I could easily afford to buy non-counterfeit products." *Id.* at 414-15. Those that expressed sentiment towards these attitudes tended to be the "sly shoppers" who perceived high product parity but bought fake goods anyway. The authors used similar questions to elicit attitudes about the other three consumer categories. *Id.* at 408.

[56] *Id.* at 415-16.

[57] *Id.* at 416.

[58] *Id.* at 415.

Low parity consumers preferring legitimate goods tended to be risk-averse.[59] These consumers preferred legitimate goods because the perceived inferiority of brand, style, function, and durability outweighed the superior price of the counterfeit.[60]

The result is a typology of consumer orientation towards counterfeit goods expressed below:[61]

Typology of Consumer Orientation Towards Counterfeit Goods

Consumer Orientation	High Product Parity	Low Product Parity
Preference for counterfeit goods	Sly shoppers	Economically concerned shoppers
Preference for legitimate goods	Ethical shoppers	Risk-averse shoppers

The broad implication of these findings is that pharmaceutical firms interested in changing consumer behavior must tailor their message. Influencing the high-product parity consumer, who through viewing the products as similar may be less sensitive to price differences, may be accomplished through changing perceptions of ethical standards. This could be accomplished through messages highlighting the illegal nature of the activity, implying the presence of a social stigma, and mentioning potential links to organized crime that would profit from counterfeit purchases.

Messages can also target local effects. Legitimate and well-paying employers may leave a region because of counterfeiting and thus highlight the loss of jobs that counterfeit purchases create.[62] For example, one study of Hong Kong revealed that lowering piracy levels

[59] *Id.*
[60] *Id.*
[61] *Id.* at 416 (presenting typology table).
[62] *See also* Swee Hoon Ang et al., *Spot the Difference: Consumer Responses Towards Counterfeits*, 18 J. CONSUMER MARKETING 219, 230 (2001) (remarking that several major software distributors were forced to withdraw from the Thai market because the majority of the purchases were lost to piracy); *cf.* Statement of Senator Carl Levin on Intellectual Property Rights Issues and the Dangers of Counterfeited Goods Imported into the United States (Jun. 18, 2007), *available at* http://www.senate.gov/~levin/newsroom/release.cfm?id=277302 ("The FTC estimates that the auto industry could hire 250,000 additional American workers if the sale of counterfeit parts were eliminated.").

would create employment for over 16,000 people and generate $3.3 billion in economic activity.[63] Such studies of economic effects can be persuasive to consumers sensitive to employment fluctuations in their local area.

Additionally, drug firms can also shift the counterfeit-buying, high-parity consumer by mitigating the perception of the "slyness" of the purchase. This may be accomplished by convincing the consumer that buying the fake is not in his or her self-interest. This may be because of the presence of inferior or shocking-sounding ingredients in the fake drugs or that the legitimate pharmaceuticals are more effective, last longer, or are easier to administer. These consumers can also be shifted diagonally downward in the diagram by highlighting the risks that accompany fake pharmaceutical purchases. Examples of injuries or death arising from consuming fake drugs are unfortunately quite common. Publicizing tragedies within the target market might be particularly effective in bringing the risk "closer to home." A successful effort would increase the risk aversion of the fake purchase so much that it would override the sly shopper benefits of buying the fakes.

A consumer buying a counterfeit drug with low product parity may not respond well to the above measures. Their incentives appear to be primarily economic, a particularly acute factor given the potential high prices of many drugs. If a person cannot possibly afford the legitimate and badly-needed drug, ethics-based persuasion will not shift that consumer's behavior. Instead, the primary focus towards changing that behavior may be raising awareness of risk. If the low-parity counterfeit consumer believes that the risk of harm from consuming the counterfeit is sufficiently high, that consumer may shift to the more expensive legitimate drug.

Finally, for some consumers the price of the legitimate drug will simply be out of reach. Even if the risk of harm from counterfeit consumption is significant, that risk may be less than the risk of harm arising from taking no drug altogether. For an impoverished individual suffering from malaria or infected with the HIV retrovirus, purchasing the counterfeit may be the only viable alternative.

That leaves reductions in price as the only measure for certain groups. Counterfeit manufacturers have a cost advantage, but that does not necessarily mean that counterfeiters pass the entire cost benefit along to the consumer. Counterfeit manufacturers seek a profit and no doubt a significant one. In addition, counterfeiters may

[63] Joy Tang, *Anti-Software Piracy Movement Gets a Boost with New BSA Members*, ASIA COMPUTER WEEKLY, Apr. 9, 1999, at 1 (citing a study by PricewaterhouseCoopers).

conspire together to set higher prices for products than would be expected for imitations.[64] Counterfeiters may shoulder costs that legitimate producers do not bear such as bribes, security, risk of fines or jail, and continuous evasion of law enforcement.

The price of risk may also be a factor. Highlighting possible harms from counterfeits places a non-monetary price on consumption over and above the explicit cost paid. The legitimate pharmaceutical producer, therefore, does not have to meet or surpass the counterfeiter's raw cost of drug production. Rather, the legitimate producer must be able to lower the price such that it can compete with the manufacturing price, the counterfeiters profit demand, illegal activity costs, potential for group price fixing, and the non-price risk of harm perceived by the consumer. The former four costs are largely within the hands of the counterfeiter, subject to law enforcement and other coercive methods. The latter cost falls within the realm of the marketing prowess of the pharmaceutical, which can through its own efforts increase the psychological price of the counterfeit to non-competitive or less competitive levels. Drug firms may have to reduce prices to compete with counterfeits, as firms have routinely done in the past,[65] but may not be forced to rely solely on price and counterfeit cost of production as its benchmark.

B. Counterfeit Consumption and Culture

Not only do economic and personal attitudes influence the propensity to purchase counterfeit products, the culture from which a person hails also impacts that decision. Lai and Zaichkowsky studied the attitudes of consumers in China, Taiwan, Hong Kong, and North America toward imitator brands.[66] The authors presented a genuine brand and an imitator brand of three common consumer products and asked respondents to judge each brand according to quality, category leadership, and purchase preference.[67] The authors also asked respondents about their attitudes towards counterfeit products.[68]

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[64] Robert M. Sherwood, *The TRIPS Agreement: Implications for Developing Countries*, 37 IDEA 491, 500 (1997).
[65] Donald E. deKieffer, *The Mexican Drug Connection: How Trade in Pharmaceuticals has Wrecked the FDA*, 9 SW. J.L. & TRADE AM. 321, 326 (2002-03) ("American drug companies routinely discount pharmaceuticals to selected markets to compete with counterfeit drugs.").
[66] Kay Ka-Yuk Lai & Judith Lynne Zaichkowsky, *Brand Imitation: Do the Chinese have Different Views?*, 16 ASIA PAC. J. MGMT. 179, 179 (1999).
[67] *Id.* at 184-85. Product categories used were corn oil, macaroni and cheese, and soup base mix. *Id.* at 184.
[68] *Id.* at 185.

Respondents offered some similar responses. Across all four groups, the best predictor of selecting an imitator was dependent upon the lack of awareness of which product, counterfeit or original, was the market leader in its category.[69] Consumers also generally preferred the legitimate product when perceived product quality of the imitation was lower.[70] Additionally, packaging also played a role. When respondents perceived similar packaging between the counterfeit and legitimate products, consumers tended to conclude that product quality was also similar.[71]

More interesting, however, were the differences in consumer responses across national borders. Hong Kong respondents were the least likely to accept imitator brands.[72] Western consumers were the most likely to purchase imitator brands even though these consumers had a strong ability to recognize the legitimate product.[73] Western consumers also had less ethical problems with purchasing brand imitations compared to the other groups.[74] This difference may be because counterfeit products available in North America were of higher quality compared to Chinese or Taiwanese markets.[75] These findings may be of limited use, however, because of the small sample size used in the study and the absence of a pharmaceutical as a sample product. Unfortunately, although studies of consumers in a single nation exist, there is insufficient research comparing counterfeit attitudes across cultures using a single set of questions and testing method.[76]

Therefore, an examination of a single country's consumer patterns may be useful to understand national differences, and China is a perfect candidate. At one time, China apparently dealt with counterfeits harshly. In 1992, a Supreme People's Court decision acted harshly in a criminal action against a distiller of counterfeit liquor.[77] The court ruled that the distillery manager disrupted the socialist public order and sentenced the counterfeiter to death.[78]

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[69] *Id.* at 186.
[70] *Id.*
[71] *Id.* at 186-87.
[72] *Id.* at 189.
[73] *Id.* at 190.
[74] *Id.*
[75] *Id.*
[76] *See, e.g.*, Chapa, Minor & Maldonado, *supra* note 51 (comparing effect of product category differences and country of origin on Mexican and American attitudes towards counterfeit products).
[77] Paul B. Birden, Jr., *Trademark Protection in China: Trends and Directions*, 18 LOY. L.A. INT'L & COMP. L. REV. 431, 475 (1996).
[78] *Id.*

As China shifted toward a market-socialist oriented economy, Chinese government officials have apparently concerned themselves less with maintaining the socialist public order through counterfeit policing. Chinese counterfeiters are thought to be at the center of a global network that distributes fake medications.[79] Organized crime has a strong presence in China, producing fake medicines that fall below the radar of law enforcement officials more interested in halting illegal drug trafficking.[80] Military and police corruption further enable the counterfeit trade.[81] The result is that China is a veritable breeding ground for the distribution of fake pharmaceuticals worldwide.

Of more interest to this article, however, is the role that consumers play in facilitating an environment favorable for counterfeit sales. A main motivation for purchasing fake drugs is to find a cheaper alternative for the often impossible-to-purchase legitimate product. One drug used to treat AIDS patients, for example, costs $12,000 for a twelve week treatment.[82] Even modestly priced drugs affordable by western standards may be out of reach for the millions of Chinese who live in poverty, especially in rural areas.

The problem in China, however, is more than just high prices. Alternative medicines, self-medication, and holistic supplements remain popular with Chinese consumers.[83] Such medicines are often sold with simple packaging, even wrapped in plain paper. While selling medicine wrapped in paper would cause suspicion to a western consumer, Chinese consumers are accustomed to it. This enables the counterfeiter to sell fake drugs easily in the consumer marketplace without cues for a consumer to evaluate whether the product is real or fake.

This also denies legitimate producers a valuable anti-counterfeiting tool – elaborate design and packaging methods. Product packaging conveys legitimacy. Complex designs, expiration dates, traceable model numbers, and even holograms can distinguish legitimate from fake medicines. Promising Radio Frequency Identification (RFID) technology allows transmission of radio signals

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[79] Saywell & McManus, *supra* note 8, at 34.
[80] Wong, *supra* note 39, at 168. *See also* Peter S. Goodman, *China's Killer Headache: Fake Pharmaceuticals*, WASH. POST, Aug. 30, 2002, at A01 (quoting remark by pharmaceutical director stating that, "[i]f you're in the business of selling heroin or cocaine, the police are on your tail. If you're making fake meningitis medicine, they don't even know you're there. We're sitting here on an unrecognized plague that afflicts the world.").
[81] Wong, *supra* note 39, at 170-71.
[82] Saywell & McManus, *supra* note 8, at 37.
[83] Wong, *supra* note 39, at 172.

about a product's source, transmission, and sale.[84] Difficult to counterfeit, even if the counterfeit good sports a false RFID tag, the serial number on that tag will not be registered as a genuine article as each product will have its own unique identifier.[85] At the very least, packaging can drive up the costs of counterfeiters who must invest in technologies to match it. Consumer acceptance, or at least acquiescence, toward unpackaged medicines inhibits potentially formidable packaging signals aimed at changing consumer attitudes towards fake drugs.

In addition, recent Chinese safety legislation has further increased the price of legitimate drugs. As of 2001, all Chinese drug companies are forced to meet a standard known as Good Manufacturing Practices (GMP).[86] These standards, designed to ensure product safety, impose average costs of twenty to thirty million yuan and may put half of China's 6,000 manufacturers out of business or force them to be acquired by other companies.[87] The inevitable result is that many more Chinese will not be able to afford GMP-compliant drugs, thus shifting even more demand toward counterfeiters who do not follow these safety standards.

Finally, consumers may mute their criticism of counterfeit operations or even condone it altogether because of the economic benefits it brings. Local Chinese governments are under significant pressure to sustain employment in an environment where national reforms are forcing many people in fields like agriculture out of work.[88] Black market jobs in counterfeiting operations keep as many as three to five million people employed that would not otherwise

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[84] D. Zachary Hostetter, *When Small Technology is a Big Deal: Legal Issues Arising from Business Use of RFID*, 2 SHIDLER J.L. COM. & TECH. 10, 10-11 (2005), *available at* http://www.lctjournal.washington.edu/Vol2/a010Hostetter.html.

[85] Gal Eschet, *FIPS and Pets for RFID: Protecting Privacy in the Web of Radio Frequency Identification*, 45 JURIMETRICS J. 301, 307 n.33 (2005). Numerous scholars have expressed concerns over RFID's impact on privacy, which may be particularly acute in the pharmaceutical context. *Compare* Reepal S. Dalal, *Chipping Away at the Constitution: The Increasing Use of RFID Chips Could Lead to an Erosion of Privacy Rights*, 86 B.U. L. REV. 485 (2006) (discussing problematic privacy concerns), *with* Jerry Brito, *Relax Don't Do It: Why RFID Privacy Concerns are Exaggerated and Legislation is Premature*, 2004 UCLA J.L. & TECH. 5 (discounting privacy concerns).

[86] Wong, *supra* note 39, at 173.

[87] *Id.* at 173-74.

[88] *Id.* at 176.

have economic opportunities.[89] Those benefiting from these operations will certainly defend them. For example, an investigator attempting to sneak into a household counterfeiting operation was attacked by local residents, sending him to the hospital with broken bones.[90]

Underlying cultural attitudes of Chinese, and by some implications Asians in general, prime a consumer body for accepting counterfeits. Traditional perceptions of individual creators is that they are obliged to share their creative efforts with the broader society, illustrated by the Chinese proverb, "[h]e that shares is to be rewarded; he that does not, condemned."[91] In calligraphy, the highest mark of mastery occurs when the student's writing is indistinguishable from the teacher's.[92] Translators of books from other languages stand on equal footing with the original author on the title page.[93] The result is a philosophy of sharing and emulation that harmonizes well with accepting imitation pharmaceuticals.

Other consumer characteristics reveal difficulty in changing consumer attitudes towards counterfeits in Asian consumers generally. Swee Hoon Ang and co-authors studied the consumer attitudes towards counterfeits by interviewing approximately 3,600 Singaporeans who had previously purchased a compact disc.[94] The study found that both buyers and non-buyers of counterfeit music did not believe the counterfeit buyers had low morals.[95] This finding solidifies the notion that imitation products and their subsequent purchase lack a significant social stigma. A counterfeit product implicates the Asian philosophy of sharing, which posits that expertise should be shared with the widest audience possible.[96] To the extent that high priced legitimate goods limit that distribution, counterfeits provide a useful service. Respondents also reported that while buying pirated discs is unfair, they did not believe it was unethical to buy them.[97] This perception may occur because of media reports of

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[89] DAVID J. CLARK, PRODUCT COUNTERFEITING IN CHINA AND ONE AMERICAN COMPANY'S RESPONSE 9 (Secretary of Defense Corporate Fellows Program: Final Report, Pfizer, Inc.) (2003), *available at* http://www.ndu.edu/sdcfp/reports/2003reports/Pfizer2003.doc.
[90] Goodman, *supra* note 80, at A01.
[91] Ang et al., *supra* note 62, at 221.
[92] *Id.*
[93] *Id.*
[94] *Id.* at 224.
[95] *Id.* at 229.
[96] *Id.*
[97] *Id.* at 229-30.

lucrative incomes that entertainers receive and that counterfeit losses may be a small price to pay for gaining mass popularity.[98]

Notwithstanding these results, consumer perceptions of pharmaceutical counterfeits might not be as unfavorable as it would appear. A study by the Quality Brands Protection Committee (QBPC), a trade association of approximately 160 multinationals interested in counterfeiting issues,[99] found that like the previous survey a majority of Chinese were likely to buy counterfeit goods.[100] This very same survey, however, also revealed what one author summarized as "strong overall opposition to buying counterfeit medicine."[101] The obvious reason may be that the risk of harmful medicines may outweigh cultural norms favoring imitative behavior. Another survey by the QPBC reveals that Chinese consumers rank counterfeit pharmaceuticals as the most dangerous of products on a "harmfulness score" when compared with a variety of other products such as cigarettes, skin care and cosmetics, household electronics, and computer products.[102] This presents an opportunity for drug firms to curb counterfeit activity through the modification of consumer attitudes either by highlighting the risk of fake drugs and/or its connections to illegal activity. Publicizing that 192,000 Chinese died from poor quality medicine in a single year might drive this point home.[103]

So what action can drug companies take? Success stories do exist, and drug firms faced with counterfeits may wish to take heed. The Heinz Corporation confronted significant competition from pirates with a variety of its products.[104] These pirates were becoming brazen, counterfeiting not only the products, but using fake Heinz delivery trucks and uniforms for distribution.[105] Heinz could have solely relied on encouraging law enforcement, which might have responded ineffectually to the problem because of bribery, corruption, or economic incentives. Worse, law enforcement might even have

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[98] *Id.*
[99] Quality Brands Protection Committee, http://www.qbpc.org.cn/en/about/about/factsheet.
[100] Wong, *supra* note 39, at 171 (citing QBPC survey).
[101] *Id.*
[102] Theodore Huang, *Survey of Chinese Consumer Perception & Experience on Counterfeits* (2001) (on file with the author). My thanks to Justine Chen of the QBPC for supplying the survey.
[103] Cockburn et al., *supra* note 23, at 302.
[104] Neil Shister, *China Never Stops*, 18 WORLD TRADE 16, 21 (2005).
[105] *Id.*

responded enthusiastically, as long as Heinz paid an expensive "travel allowance" to police representatives.[106]

Instead, Heinz addressed the demand side of the counterfeit problem. Heinz attempted to encourage law enforcement through maximizing the public exposure of all officials who would help in raids in counterfeiters.[107] When raids did occur, Heinz brought reporters to witness them, even paying all of their travel expenses to get there.[108] The publicity brought negative exposure to the pirates, and Heinz did not hesitate to highlight the risk of the counterfeiter's unsanitary manufacturing conditions.[109] Heinz framed the raids not as a measure to defend corporate profits, but as a consumer protection measure to safeguard Chinese children.[110] Capitalizing on the social sensitivity to public shame in China,[111] Heinz was successful in curbing the demand for pirated goods and any sympathy for the counterfeiters themselves. After the raids, Heinz suffered no further serious counterfeiting problems.[112]

The example bodes well for drug firms. Baby formula, while not quite a medicine, is an ingested product consumed by vulnerable members of Chinese society. Just as Heinz raised the perception of risk regarding fake formula such that it exceeded the benefits of buying the counterfeit, so can a pharmaceutical company ply the same tools to raise the perceived risk levels of counterfeit drug use. The analogy is not perfect, however, as drug firms generally charge a much higher price for their product compared to infant formula. Drug firms have a higher risk threshold to surmount. Instead of overcoming a relatively modest price differential, drug firms have to convince

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[106] Wong, *supra* note 39, at 169 (describing an example of how a pharmaceutical firm's efforts to encourage a raid against counterfeiters resulted in a request of a $40,000 "travel allowance" from police).

[107] John Donaldson & Rebecca Weiner, *Swashbuckling the Pirates: A Communications-Based Approach to IPR Protection in China, in* CHINESE INTELLECTUAL PROPERTY LAW AND PRACTICE 409 (1999).

[108] *Id.* at 426.

[109] *Id.*

[110] *Id.*

[111] *Cf.* Carole J. Buckner, *Realizing* Grutter v. Bollinger*'s "Compelling Educational Benefits of Diversity" – Transforming Aspirational Rhetoric into Experience*, 72 UMKC L. REV. 877, 916 (2004) ("Chinese culture de-emphasizes the individual and emphasizes deference to others to avoid bringing shame on the extended family."). Public shame, however, is not always a successful tool. *See* Edward Cody, *Public Shaming of Prostitutes Misfires in China*, WASH. POST FOREIGN SERV., Dec. 9, 2006, at A10 (public shaming effort law enforcement meets with criticism of violating prostitutes' rights of privacy), *available at,* http://www.washingtonpost.com/wp-dyn/content/article/2006/12/08/AR2006120801480.html.

[112] Donaldson & Weiner, *supra* note 107, at 426.

consumers to purchase what is in many cases a dramatically more expensive product. The greater the difference in price, the greater the risk the consumer must perceive before believing that buying the legitimate drug is the optimal choice.

Another limit is that some buyers will never be able to afford the medicine no matter what the price. If the drug at issue treats a life-critical ailment, the consumer will buy the counterfeit drug no matter what the risk, as even a chance of improved health may be better than no chance at all. In this situation, the drug company will have to establish attitudes that the risk of endangering one's health from a dangerous counterfeit drug exceeds the risk of consuming no drug at all – a tough sell especially for consumers with dire illnesses.

If the drug at issue does not treat a life-critical aliment, such as erectile dysfunction or male pattern baldness, the problem is less acute for the drug firm. If the drug firm can successfully increase perceived risk, this may result in the consumer not purchasing the drug at all. The pharmaceutical company benefits from the lost revenue received by the counterfeiter, but does not gain from the lost revenue with a sale of its own product. As a result, even for legitimate medicines priced out-of-range for a given consumer, raising perceived-risk attitudes of counterfeit products can help legitimate firms or at the very least hurt the counterfeit producer. The result is that across the broad range of drugs and consumer attitudes, pharmaceutical enterprises have a reasonable chance of influencing attitudes towards a more favorable result for the firm.

III. CONCLUSION

International Spirits Distributors (ISD), a liquor company, entered the Thai market, seeing substantial potential for sales of its premium liquor brands.[113] Not surprisingly, the firm's success bred counterfeits manufactured by organized crime.[114] Rapid modification of packaging, pursuit of legal and political channels, and even advertising had no sustainable effect in stemming the tide of counterfeits.[115] The CEO took the matter into his own hands, hiring a former police commissioner, recently retired Special Air Service commandos, and overtime pay for a phalanx of local law enforcement.[116] Police investigated counterfeit operations and

[113] Robert T. Green & Tasman Smith, *Countering Brand Counterfeits*, 10 J. INT'L MARKETING 89, 96 (2002).
[114] *Id.*
[115] *Id.* at 96-97.
[116] *Id.* at 99.

commenced raids in which the CEO personally accompanied the authorities.[117] During these raids, the CEO was shot at on two occasions and wounded once.[118] Multiple attempts were made on his life. Police recommended on one occasion that he remain in his home for an extended period because the counterfeit gangs had hired a professional assassin from a neighboring country to kill him.[119] The gangs whose operations were targeted even filed criminal charges against the executive for trespass, willful damage, and other claims.[120] The result of the repeated raids and pressure was a "spectacular success," as counterfeit sales of the firm's liquor products plummeted from 21% to less than 1% four years later.[121] The Thai market became the parent firm's second most profitable market in the world and became a model for other companies to follow.[122]

One wonders how many CEOs would volunteer for such a dangerous assignment. Yet, pharmaceutical firm executives need not don a bulletproof vest in order to have a measurable impact on the counterfeit problem. So much of firm efforts and scholarly writings focus on the supply side of the problem. This would include strengthening current laws and threatening sanctions against those nations that are unwilling to protect foreign intellectual property rights. Coercive efforts against governmental agencies responsible for enforcement can be successful, but rarely alone present a long-term solution to the problem.[123]

If the consumer demand for counterfeits declines, it is difficult for counterfeit manufacturers to circumvent it. The demand side of fake pharmaceuticals is an important and under-explored part of the problem. More than just a question of price, consumer perceptions of counterfeits reflect a complex array of attitudes, behaviors, and perceptions that all influence whether or not to purchase a legitimate or counterfeit product. While scant research directly addresses attitudes towards pharmaceutical drugs, the present studies of non-drug perceptions can help us understand the mental processes of the consumer. The result is that marketing messages by drug firms can be more segmented, more targeted, and offer a more convincing message to purchase a legitimate pharmaceutical over a counterfeit one.

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[117] *Id.* at 100.
[118] *Id.* at 101.
[119] *Id*.
[120] *Id*.
[121] *Id.* at 102.
[122] *Id*
[123] Robert C. Bird, *Defending Intellectual Property Rights in the BRIC Economies*, 43 AM. BUS. L.J. 317, 335-39 (2006) (describing the limitations of U.S. government coercion in protecting intellectual property rights).