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Once Upon an Economics Course: Using Fairy Tales to Teach Economics

Are fairy tales merely bedtime stories that offer amusement and wisdom for children, or are they stories about how rational individuals (in a world of magic) make choices to allocate scarce resources and maximize utility? This paper proposes that fairy tales serve both purposes, therefore providing educators—specifically secondary and post-secondary instructors—with an opportunity to impart economic concepts in the classroom through the tales. As most students have been acquainted with fairy tales from childhood, incorporating them into an economics class allows the students to read the stories through a new lens of understanding by applying concepts including scarcity, opportunity costs, utility, technology, and risk.

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1. Introduction

Across cultures, humans have been telling stories since they could communicate. The "fairy tale" as an oral, literary, and even cinematic genre has a rich history. The distinguishing characteristic of this particular genre of stories is an element of "wonder." This may manifest itself through instances of fantasy (such as talking animals) or outright magic (such as fairy godmothers and witches). Literary scholar Jack Zipes asserts that the motivation for these tales is to "transform the world and make it more adaptable to human needs, while we also try to change and make ourselves fit for the world" (Zipes, 2012). Fairy tales are a way that humans, as rational beings, confront and deal with actual problems facing humankind if there were a little involvement from an imaginary realm of enchantment.

While the inclusion of fantasy and magic clearly separates fairy tales from reality, the motivation for the discipline of economics is not so different from the overarching purpose of these stories. In economics, we likewise study incentive-driven individuals facing problems who must make choices to maximize their utility. Consequently, by combining fairy tale literature with economic context, we can establish a new lens for understanding human needs and subsequent actions.

From a pedagogical standpoint, this presents an opportunity for an instructor to use fairy tales as a way to present economic concepts to students in the classroom. There is evidence that this has been utilized to some extent in elementary and secondary education settings. A search of lesson plans made available by the Council for Economic Education (EconEdlink.org and Virtual Economics) reveals a handful of lessons based on children's stories including fables and fairy tales. However, a similar search of "fairy tales" in the EconLit database does not turn up any articles on teaching economics with fairy tales at the college and university levels.

While the use of fairy tales to introduce basic economics concepts may be present in elementary classrooms, the goal of this paper is to extend the use of fairy tales in economic instruction as high as the undergraduate level as well. Why are children's stories relevant for use in teaching economics in the high school and college classrooms? First, for their familiarity. Fairy tales are a staple in early childhood reading and story-telling. Consequently, the simple yet memorable stories can readily be recalled and retold making it easy to discuss the themes with a diverse classroom audience. Secondly, modern-day adaptations of the stories continue to make their way into the movies, frequently even drawing largely older audiences. While Walt Disney targeted younger audiences with the animated versions of fairy tales (ie, *Snow White and the Seven Dwarves,* (1937) and *Sleeping Beauty*, (1959)), adult audiences have enjoyed recent "grown-up" versions of the very same stories in films such as *Snow White and the Huntsman* (2012) and *Maleficent* (2014). Finally, fairy tales serve as another potential resource in an instructor's teaching toolbox to make economics more understandable and relatable to students. In a lecture environment that may otherwise tend to seem dry to uninterested students and non-majors, fairy tales may be just the magic needed to transform the dismal science before the very eyes of skeptical students.

2. Literature Review

The advantages of using innovative approaches to teaching undergraduate economics, particularly at the introductory level, have been widely examined in the literature despite gradual incorporation of these ideas into the classroom (Becker, 2004; Becker & Watts, 1996; 2001; 2008). One modern teaching style is to integrate multimedia and pop culture clips directly into lecture. Pop culture references help to draw students into potentially dry textbook concepts while simultaneously showing the ubiquitous nature of economics (Geerling, 2012). Leet and Houser (2003) demonstrate how clips from popular films can be used to illustrate economic

concepts, and Mateer (2005) does the same in a student workbook. Popular television series, including *The Simpsons*, *The Big Bang Theory*, *The Office,* and *Seinfeld*, have likewise been used to relate economic concepts to students (Ghent, Grant, & Lesica, 2011; Hall, 2005; Kuester, Mateer, & Youderian, 2014; Luccasen & Thomas, 2010; Tierney, Mateer, Smith, Wooten, & Geerling,. 2016).

Familiar literature, for both younger and older readers, has also been used in the classroom as a pedagogical example. Yetter (2016) explores economic connections to the children's series, the Berenstain Bears, for use in the elementary classroom. Likewise, Deyo and Podemska-Mikluch (2014) show how the fantasy wizarding world of Harry Potter can introduce basic economics concepts in the classroom while targeting an older classroom audience. Another fantasy realm that has been tapped for use in the economics classroom is the superhero world (O'Roark, 2017). The superhero genre bears many resemblances to the fairy tales that this paper discusses because of the versatility of presenting the stories in both print and movies.

Perhaps not surprisingly, fairy tales have made their way into the elementary classroom as previously discussed, where students may get their first exposure to economics through the telling of familiar children's stories. However, it is surprising that there are inadequate discussions about incorporating the same tales into high school classrooms and even more advanced undergraduate lectures. Miller and Watts (2011) discuss the advantages of using Dr. Seuss stories in the undergraduate classroom asserting that some of the concepts of these so-called children's stories "are sophisticated enough that they are most appropriately used in economics lessons and classes for older students." Likewise, it is sensible that fairy tales could serve a similar role.

Despite their popularity in numerous adult blockbuster films, few, if any, authors have shared outlines to incorporate the fairy tales into the secondary and post-secondary classrooms. The goal of this paper is to fill this gap and provide teachers with new ideas for introducing economic concepts in fresh new ways using fairy tales.

3. Economic Topics

This section discusses possible, yet certainly not exhaustive, applications of economic concepts that can be found in fairy tales that can in turn be presented in the classroom. Since fairy tales are featured in print and film, both formats can be used in the classroom to illustrate relevant topics. A listing of the economic concepts discussed in this paper with corresponding fairy tale excerpts from movie and print locations is provided in Appendix A. The familiarity of the tales provides additional ease of presenting the stories and receptibility.

However, it is important for instructors to develop their own strategy for how to incorporate the economic concepts found in fairy tales into their course. There are several ways that instructors can implement this approach to teaching the concepts. Many of the examples in this section would serve as good discussion starters prior to or during the introduction of new concepts. Instructors could show a short clip from a movie in the classroom or students could be assigned a fairy tale reading in advance of the lecture. Instructors could then use this as a springboard to either launch a discussion or to provide an example for a particular concept during lecture. For several examples of how to incorporate fairy tales into the classroom, see Appendix B.

After demonstrating some of the concepts that can be found in fairy tales, instructors may want to let students get creative with making their own economic connections in fairy tales. Students can be given the opportunity to rewrite a well-known fairy tale using economic terms or write their own fairy tale with the goal of expressing specific economic concepts. Not only do these assignments help to reinforce the actual economic definitions being taught, but

they also teach students to think critically about how the concepts are woven into literature and the real world.

Scarcity

The basic problem that the field of economics examines is scarcity. Likewise, the common thread that sets the stage for the plotline in fairy tales is also scarcity. The lack of food plays a central role in many fairy tales. Consequently, the idea that food supplies could even be "magical" or "endless" is universally appealing from the perspective that one would never need to worry about the scarcity of this vital resource. A reader can readily understand the eagerness that two starving children would have for finding a house made of gingerbread (Grimm & Grimm, 2012) or the excitement that the penniless Jack would have when his ordinary-looking beans sprouted into a giant beanstalk leading to riches in the sky (Jacobs, 2008).

While there are many examples of poverty in these stories, scarcity should not be illustrated as a problem for only poor fairy tale characters. Impoverished characters experience a very real lack of resources (such as food), but there are other examples of scarcity that remind us that *everyone* deals with scarcity. Frequently, fairy tale characters find "time" to be a significant resource in short supply. Cinderella has only until midnight to attend the ball before she is transformed back into a lowly servant girl. The Little Mermaid has limited time to win the prince's affections before his marriage to another. In *Rumpelstiltskin*, the miller's daughter has only three days to properly identify the imp's unusual name (Lang, 1996). Scarcity of time has always and everywhere presented a challenge to humans as they attempt to deal with this problem.

Power actually poses a different kind of scarcity for some fairy tale characters. There only can be one rightful heir to the throne, therefore this scarcity of legitimate ruling power makes it highly desirable. To be king or queen is so desirable, that characters like Queen Ravenna in *Snow White and the Huntsman* (2012) go through great lengths to preserve and protect their power. Similarly, there is a shortage of eligible bachelor princes (and the associated prestige and social standing) in stories like *Cinderella* causing women of the kingdom to desperately compete for the prince's attention at the royal ball.

Choice, Cost-Benefit Analysis, Opportunity Costs

One common theme in both life and fairy tales is that when we make choices, there are consequences for our actions. In particular, when storybook individuals weigh the costs and benefits of their options, their ultimate decision often defines the moral of the tale. Foolish fairy tale characters are frequently (though not always) punished for their poor decisions, reinforcing themes of morality and life lessons for young children.

Returning to the dominant fairy tale problem of scarcity, we see that fairy tale characters choose different ways to deal with deficiency and are likewise met with different consequences. One common approach for impoverished characters is thievery. We see this in *Rapunzel*, where Rapunzel's pregnant mother steals some lettuce from the witch's garden, only to have her daughter locked away in a tower (Grimm & Grimm, 2012). Hansel and Gretel eat from the gingerbread house in the middle of the woods and are themselves nearly eaten by the witch that lives there. In different variations of *Beauty and the Beast*, Beauty's father is caught attempting to steal a rose from the beast and is taken prisoner in his castle (de Beaumont & Ashliman, 2011). A familiar consequence of the choice of thievery is the penalty associated with

getting caught.[1]

Cinderella takes a more conservative approach when considering the costs and benefits of her actions and is eventually rewarded as she becomes the quintessential "rags to riches" success story. In Charles Perrault's version of the tale, the cruel stepmother employs Cinderella in the "meanest work of the house":

> [Cinderella] scoured the dishes, tables, etc., and scrubbed madam's chamber and those of misses, her daughters; she lay . . . upon a wretched straw bed, while her sisters lay in fine rooms, with floors all inlaid, upon beds of the very newest fashion, and where they had looking-glasses so large that they might see themselves at their full length from head to foot (Lang, 1996).

Cinderella is not allotted the same treatment as her privileged stepsisters. Nevertheless, "the poor girl bore all patiently and dared not tell her father, who would have rattled her off; for his wife governed him entirely" (Lang, 1996). Cinderella weighs the costs of trying to obtain reasonable if not equitable circumstances, by pleading her case with her father and realizes that she is better off submitting to her lowly situation instead.

An important concept connected to decision-making is "opportunity cost," or the highest valued alternative that must be given up when making a particular decision. In the numerous fairy tale stories about "happily ever after" seekers, love is the reason for choice and the ensuing opportunity costs that characters face. In Disney's version of *The Little Mermaid* (1989), we see this tradeoff quite distinctly in the mermaid Ariel's dialogue with Ursula, the sea witch, as they attempt to make a deal, and Ariel must decide between a visit to the human world and life in her mermaid kingdom:

> **Ursula:** Have we got a deal?
>
> **Ariel:** If I become human, I'll never be with my father or sisters again.
>
> **Ursula:** That's right! But you'll have your man. Life's full of tough choices, isn't it? And there is one more thing. We haven't discussed the subject of payment. You can't get something for nothing, you know.
>
> **Ariel:** But I don't have any…
>
> **Ursula:** I'm not asking much. Just a token really, a trifle. You'll never even miss it. What I want from you is... your voice.
>
> **Ariel:** My voice? (*The Little Mermaid*, 1989)

Ariel recognizes that the opportunity cost of becoming human is that she will never see her family again. It is also worth noting that Ursula reminds Ariel that there is "no free lunch" (with the comment, "You can't get something for nothing") even in fairy tales.

Another unique discussion of opportunity costs comes from the story of *Aladdin* (1992, 2019), where a young man finds a magic genie in a lamp who grants him three wishes. While the chance to wish for anything would seem invaluable especially for a young man living in poverty, it quickly becomes apparent that with each additional wish that he makes, he must

[1]The inclusion of magical elements in fairy tales arguably makes a cost-benefit analysis more challenging for fairy tale characters than for ourselves in a non-magic world. Fairy tale characters must contend with the often unpredictable behavior of witches and beasts, while we have the luxury of not needing to incorporate these volatile creatures into our own decision-making processes.

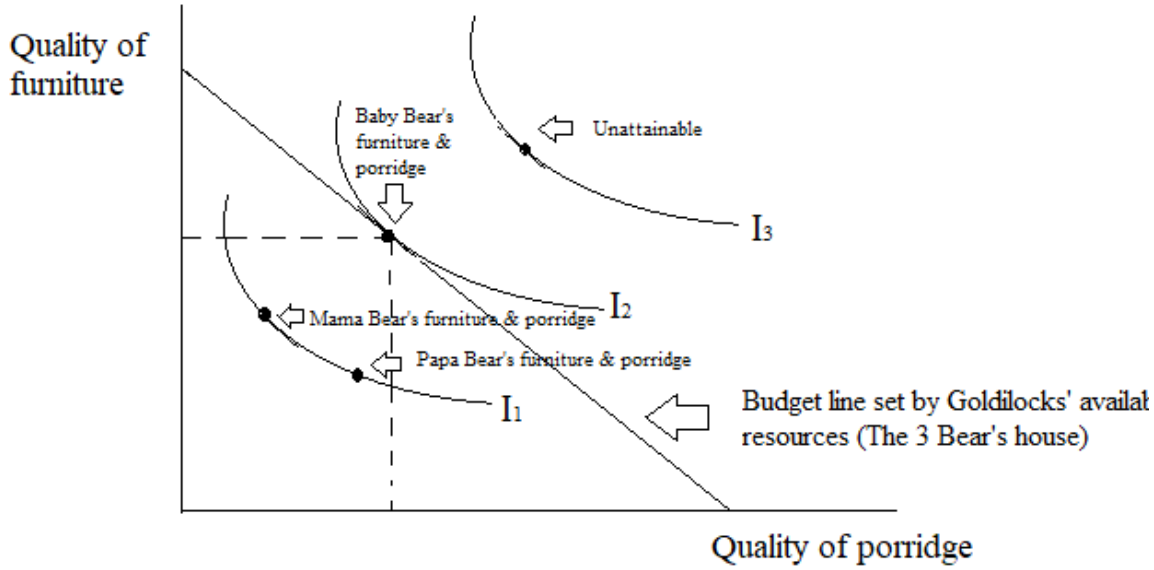
forgo the opportunity to wish for other things, in a world of unlimited human wants.

Utility Maximization

Utility maximization is a driving force behind the actions of rational human beings, and fairy tale characters are no different. We see this from the perspective of the "bad" characters and "good" characters alike. Cinderella's evil step-mother eagerly sends her two daughters to the ball in hopes of securing a marriage for one of them to the prince, thus attaining the much desired upgrade in social standing that would come along with the union. Likewise, Cinderella can maximize her utility even given her much stricter constraints. After completing her chores, her fairy godmother allows her the opportunity to secretly attend the same ball (until midnight only) where she meets and wins the heart of the prince.

An unforgettable utility maximizer in fairy tales is Goldilocks. Goldilocks makes it clear with her distinct preferences that when presented with choices (whether it be regarding porridge, chairs, or beds), one of the options is superior to the others, and only one option will maximize her utility. A hypothetical set of indifference curves with a budget constraint is shown for Goldilocks in Figure 1. Goldilocks' "budget constraint" can be thought of as the resources at her disposal in the Three Bears' home, made available by Papa Bear, Mama Bear, and Baby Bear. Specifically in the story, Goldilocks evaluates the quality of the porridge and the furniture, as she makes her decision about which to choose. Moving along the horizontal axis to the right indicates the porridge is of higher quality, and moving to a higher position along the vertical axis indicates the furniture (whether chairs or beds) is of higher quality. In both cases, "higher quality" is considered better. Therefore, a set of indifference curves indicate that as long as Goldilocks can move further and further to the northeast in the graph, she will continue to increase her utility.

Figure 1 – Goldilocks' Indifference Curves and Budget Constraint at the Bears' House



Of the three indifference curves shown (I_1, I_2, and I_3), Goldilocks will choose the bundle on I_2 (Baby Bear's furniture and porridge), as its tangency to the budget constraint represents the point of utility maximization. By contrast, Mama and Papa Bear's respective porridge and furniture combinations fall on a lower indifference curve (I_1) as these combinations will not provide as much satisfaction (too hot/too cold or too hard/too soft). While Goldilocks would

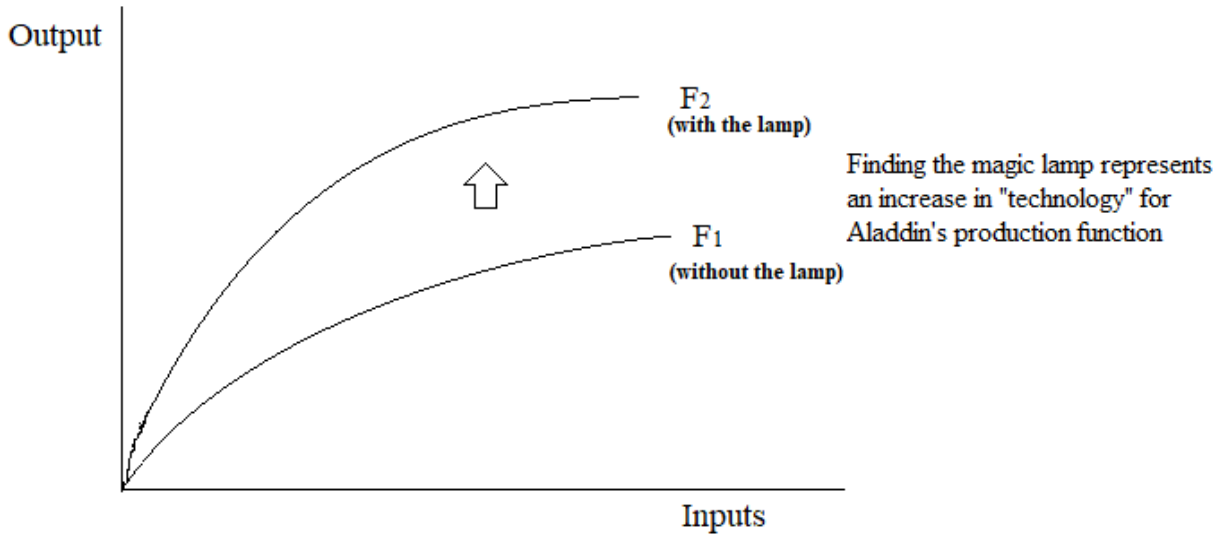
prefer a bundle on an even higher indifference curve (such as a point on I_3), anything beyond her budget constraint is unattainable as it is simply not available in the Bears' home. Given the resources that she is working with, Goldilocks exhibits clear rationality in always choosing the option that is "just right."

Production Functions & Increase in Technology

One of the novelties of the fairy tale is the chance to suspend strict reality and allow for the involvement of magic. Within fairy tales, there is a common focus "on finding magical instruments, extraordinary technologies, or powerful people and animals that will enable protagonists to transform themselves along with their environment, making it more suitable for living in peace and contentment" (Zipes, 2012). In fairy tales, we see examples such as a genie that grants wishes, a fairy godmother that transforms a servant girl so that she can attend the royal ball, and magic beans that sprout into a beanstalk leading to a giant's treasures in the sky. While these examples are make-believe, the magic that improves the lives of the characters in these stories is not so different from the technology in the real world that allows individuals and economies to shift their production functions to produce more output.

We can examine the tale of *Aladdin* (1992, 2019) as an example.[2] Figure 2 illustrates Aladdin's production function before and after he finds the magic lamp with a genie that will grant him three wishes. The upward shift (from F_1 to F_2) shows that with the aid of the lamp, Aladdin can accomplish more (produce more output) at every level of his inputs. In this way, the magic lamp is analogous to an increase in technology. The genie is limited to only granting three wishes per person, so any individual who uses the lamp will eventually experience diminishing returns, and the leveling out of the production function. However, it is clear that the wishes have advanced Aladdin's status in life dramatically as he ultimately transitions from a poor "street rat" to the husband of the princess of the kingdom.

Figure 2 – Aladdin's Production Function



[2]Appendix A includes links to movie clips from Cinderella (1950 and 2015 versions) and Aladdin (1992 and 2019 versions) as visual examples that can be used in classroom discussions of magic as an analogy for technology, both of which shift the production function upward.

Risk

Fairy tales involve a healthy dose of risk. We can analyze character behavior using economic risk analysis. Assuming the characters in the stories are intelligent, rational human beings, we must conclude that some of the fairy tale characters are "risk-loving" while others tend to demonstrate a "risk averse" attitude. Before the unexpected appearance of the gigantic beanstalk, Jack trades his impoverished family's only cow for so-called "magic beans." After being scorned by his family for what appeared to be a reckless decision, Jack can redeem himself only after the beans do in fact sprout into a mammoth beanstalk that he climbs into the sky and is rewarded with the giant's valuables (after defeating the giant, of course). Talk about a gamble that pays off big!

Several other fairy tale characters appear to be "risk-loving": Goldilocks helps herself to the accommodations of a house that is already occupied (even despite the still warm porridge). Hansel and Gretel eat part of an unidentified gingerbread house in the woods and are nearly eaten by the house's owner, who happens to be a witch. The Little Mermaid makes a deal with a sea witch of ill-repute for a chance to see a man she has barely met.

Nevertheless, not every fairy tale follows the same model. Some fairy tale characters are more conservative when it comes to risk. For instance, Cinderella submits to her lowly station in life as the ill-treated and overworked step-daughter with dutiful perseverance instead of attempting to break free of it. With regards to risk, "in one common story, it pays to seek short-term gain in a context of extreme uncertainty; in alternative versions, staying the course for the long term leads to far greater profit" (Noyes, 2016).

Asymmetric Information

As the name implies, *fairy* tales regularly include non-human characters such as fairies, witches, giants, talking animals, and other magical creatures. Their interactions with the human characters are not always straight-forward. Witches have been known to offer poison apples to unsuspecting heirs to the throne. Wolves have impersonated grandmothers in attempts to eat trusting girls in red hoods. A common theme among fairy tales is that some characters will be privy to additional information that gives them the upper hand over the other characters in the stories as these swindlers attempt to take advantage of this asymmetric information for their own gain.

One well-known fairy tale con artist is Rumpelstiltskin.[3] In this story, a miller's daughter faces an impossible situation in which she must spin hay into gold or be put to death. When a small man offers to complete the task for her, the young woman has little choice but to accept his proposition in return for the promise of her first-born child. Inevitably, when she gives birth to her baby, Rumpelstiltskin returns under the terms of their agreement. When the girl protests the arrangement, Rumpelstiltskin offers her an "opportunity" to break the deal: the woman must correctly guess his highly unusual name within three days. This is an example of asymmetric information. Rumpelstiltskin knows that his name is so unique, that he does not expect that the girl will ever figure out what it is. Therefore, in Rumpelstiltskin's view, the terms of their new agreement merely cement his rights to the newborn child. What he does not anticipate, however, is that the girl would have spies of her own that would happen upon the opportunity to learn the little man's peculiar name.

[3]A variation on the traditional Rumpelstiltskin story can be found in the 2010 film, Shrek Forever After (see Appendix A). This innovative fairy tale includes the character Rumpelstiltskin attempting to conduct another devious deal using his asymmetric information.

4. Conclusion

Once we get beyond the fairies and witches, we can easily see characters that are not so different from ourselves concerning needs, incentives, and actions. While in the fairy tale world characters endeavor to live "happily ever after," in our world, we seek to "maximize our utility ever after." Fairy tales may incorporate elements of magic and fantasy, but characters are still rational individuals who must make decisions to better their situation. This is what makes the fairy tale such an ideal way to present basic economic concepts in an upper-level classroom setting. Genies, mermaids, and talking animals may be just what is needed for instructors looking for new ways to captivate students and illustrate the everyday magic of economics.

References

Aladdin. 1992. [film] Directed by J. Musker & R. Clements. United States: Walt Disney Pictures.

Aladdin. 2019. [film] Directed by G. Ritchie. United States: Walt Disney Pictures.

de Beaumont, J. & Ashliman, D. L. 2011. "Beauty & the Beast." *The Young Misses Magazine, Containing Dialogues between a Governess and Several Young Ladies of Quality Her Scholars*, 4th ed., v. 1 (London: C. Nourse, 1783), pp. 45-67. https://pitt.edu/~dash/beauty.html

Becker, W. E. 2004. Economics for a higher education. *International Review of Economics Education*, *3*(1), 52–62.

Becker, W.E. & Watts, M. 1996. Chalk and talk: A national survey of teaching undergraduate economics. *American Economic Review*, *86*(2), 448-454.

Becker, W. E. & Watts, M. 2001. Teaching economics at the start of the 21st century: Still chalk and talk. *American Economic Review*, *91*(2), 446-451.

Becker, W. E., & Watts. M. 2008. A little more than chalk and talk: results from a third national survey of teaching methods in undergraduate economics courses. *Journal of Economic Education*, *39*(3), 273-286.

Cinderella. 1950. [film] Directed by C. Geronimi, W. Jackson & H. Luske. United States: Walt Disney.

Cinderella. 2015. [film] Directed by K. Branagh. United States: Walt Disney Pictures.

Corbould, E. H., Crowquill, A., McConnell, W., Andersen, H. C., & Dalziel Brothers. 1887. *Mother goose's fairy tales : with two hundred and twenty illustrations* (Ser. Nineteenth century collections online: children›s literature and childhood). George Routledge and Sons. https://ufdc.ufl.edu/UF00055061/00001

Deyo, D. & Podemska-Mikluch, M. 2014. It's just like magic: The economics of Harry Potter. *Journal of Economics and Finance Education*, *13*(2), 90-98.

Fun and Fancy Free. 1947. [film] Directed by J. Kinney, B. Roberts, H. Luske, & W. Morgan. United States: Walt Disney Productions.

Geerling, W. 2012. Bringing the 'dismal science' to life: teaching economics through multimedia. *International Review of Economics Education*, *11*(2), 81-90.

Ghent, L. S., Grant, A.P., & Lesica, G. 2011. The economics of Seinfeld. *The Journal of Economic Education, 42*(3), 317-318.

Grimm, J., & Grimm, W. 2012. *Household tales by brothers grimm*. (A. W. Hunt, Trans.) (Ser. Listen alaska). Duke Classics. https://www.gutenberg.org/files/5314/5314-pdf.pdf

Hall, J. 2005. Homer economicus: Using *The Simpsons* to teach economics. *Journal of Private Enterprise*, *20*(2), 165-176.

Jacobs, J. 2008. *English fairy tales*. Floating Press. http://www.authorama.com/english-fairy-tales-15.html

Kuester, D., Mateer, D. G., & Youderian, C. J. (2014). The Economics of The Office. *The Journal of Economic Education*, *45*(4), 392.

Lang, A. 1996. The blue fairy book. Project Gutenberg. https://www.gutenberg.org/files/503/503-h/503-h.htm#link2H_4_0007

Leet, D. & Houser, S. 2003. Economics goes to Hollywood: Using classic films and documentaries to create an undergraduate economics course. *The Journal of Economic Education*, *34*(4), 326-332.

The Little Mermaid. 1989. [film] Directed by R. Clements & J. Musker. United States: Walt Disney Pictures.
Luccasen, R. A. & Thomas, M. K. 2010. Simpsonomics: Teaching economics using episodes of The Simpsons. *The Journal of Economic Education*, *41*(2), 136-149.

Maleficent. 2014. [film] Directed by R. Stromberg. United States: Walt Disney Pictures.

Mateer, G. D. 2005. *Economics in the Movies*, Mason, OH: South-Western.

Miller, B. & Watts, M. 2011. Oh, the economics you'll find in Dr. Seuss! *The Journal of Economic Education*, *42*(2), 147-167.

Noyes, D. 2016. Fairy-tale economics: Scarcity, risk, choice. *Humble Theory: Folklore's Grasp on Society*, Bloomington, Indianapolis: Indiana University Press.

O'Roark, B. 2017. Super-economics Man! Using superheroes to teach economics. *Journal of Economics Teaching*, *2*(1), 52-67.

Shrek Forever After. 2010. [film] Directed by M. Mike. United States: DreamWorks Animation.

Snow White and the Huntsman. 2012. [film] Directed by R. Sanders. United States: Universal Pictures.

Tierney, J., Mateer, G. D., Smith, B., Wooten, J., & Geerling, W. 2016. Bazinganomics: Economics of The Big Bang Theory. *The Journal of Economic Education*, *47*(2), 192.

Yetter, E. 2016. "Using the Berenstain Bears to teach economics in the elementary classroom" *Journal of Economics Teaching*, *1*(1), 41-70.

Zipes, J. 2012. *The Irresistible Fairy Tale: The Cultural and Social History of a Genre,* Princeton, New Jersey: Princeton University Press.

Appendix A: Fairy Tale Examples in Movie & Print by Economic Concept

Topic	Source	Format	Location
Scarcity	*Hansel & Gretel*	Print	https://www.gutenberg.org/files/5314/5314-pdf.pdf
	Jack and the Beanstalk	Movie	https://www.youtube.com/watch?v=KqEVYbPw9ll&t=100s
	Cinderella	Movie	https://www.youtube.com/watch?v=39DVOc-yMxs
	The Little Mermaid	Movie	https://www.youtube.com/watch?v=a0fWYtwvrww
	Rumpelstiltskin	Movie	https://www.youtube.com/watch?v=HFTljBf1efs
	Snow White & the Huntsman	Movie	https://www.youtube.com/watch?v=U2lkhbWGYtI
	Cinderella	Movie	https://www.youtube.com/watch?v=BztdlbGlNfo
Choice, Cost-Benefit Analysis, Opportunity Cost	*Rapunzel*	Print	https://www.gutenberg.org/files/5314/5314-pdf.pdf
	Beauty & the Beast	Print	https://pitt.edu/~dash/beauty.html
	Cinderella	Print	https://www.gutenberg.org/files/503/503-h/503-h.htm#link2H_4_0007
	The Little Mermaid	Movie	https://www.youtube.com/watch?v=a0fWYtwvrww
	Aladdin	Movie	https://www.youtube.com/watch?v=zWgBZ7erqDo
Utility maximization	*Cinderella*	Movie	https://www.youtube.com/watch?v=W73Y3vCAZHc
	Goldilocks & the 3 Bears	Print	https://ufdc.ufl.edu/UF00055061/00001

Production Functions & Change in technology	*Aladdin*	Movie	https://www.youtube.com/watch?v=MLavnoG1hKU https://www.youtube.com/watch?v=nleG-3c4IdU
	Cinderella	Movie	https://www.youtube.com/watch?v=yDjuuMMmRuM AND https://www.youtube.com/watch?v=VNKuARjkWEg https://www.youtube.com/watch?v=mYa6xHBX8Rs
	Jack & the Beanstalk	Print	http://www.authorama.com/english-fairy-tales-15.html
Risk	*Jack & the Beanstalk*	Movie	https://www.youtube.com/watch?v=KqEVYbPw9ll&t=100s
	Goldilocks & the 3 Bears	Print	https://ufdc.ufl.edu/UF00055061/00001
	Hansel & Gretel	Print	https://www.gutenberg.org/files/5314/5314-pdf.pdf
	The Little Mermaid	Movie	https://www.youtube.com/watch?v=a0fWYtwvrww
	Cinderella	Print	https://www.gutenberg.org/files/503/503-h/503-h.htm#link2H_4_0007
Asymmetric information	*Snow White & the 7 Dwarves*	Movie	https://www.youtube.com/watch?v=Y7PhDvFV7Rk
	Little Red Riding Hood	Print	https://www.gutenberg.org/files/5314/5314-pdf.pdf
	Rumpelstiltskin	Movie	https://www.youtube.com/watch?v=HFTIjBf1efs
	Shrek Forever After	Movie	https://www.youtube.com/watch?v=sv_MB8nh3Nk

Appendix B: Examples of Incorporating Economic Concepts from Fairy Tales into Lectures

Opportunity Cost

After introducing the concept of "opportunity cost," show the following clip from Disney's *The Little Mermaid* (1989): https://www.youtube.com/watch?v=a0fWYtwvrww

Follow-up Discussion Questions:

- What is Ariel's opportunity cost of becoming human?

  ANSWER: She may never see her father and family again

- Ursula says, "You can't get something for nothing, you know." What economic concept does this illustrate?

  ANSWER: There is no free lunch

Scarcity/Utility

Before this clip and discussion, students should be familiar with the concepts of "scarcity" and "utility." Show the following clip from *Cinderella* (2015):

https://www.youtube.com/watch?v=BztdIbGlNfo

Follow-up Discussion Questions:

- Comment on Lady Tremaine's remark:

  "My dear girls, to see you like this, it makes me believe one of you might just snare the Prince. And to think I have two horses in the race! I dare say no one in the kingdom will outshine my daughters."

- What "resource" is scarce from the perspective of the eligible maidens in the kingdom?

  ANSWER: Bachelor princes are scarce. Marriage to the prince presents an opportunity for an upgrade to royal status

- What does Lady Tremaine stand to gain from one of her daughters marrying the prince? (In economic terms, what would increase her utility?)

  ANSWER: Her own advancement in social status; wealth/prestige

- How is Cinderella's stepmother attempting to maximize her utility in this situation?

  ANSWER: Sending both daughters to the ball ("two horses in the race");

attempting to keep Cinderella (the competition) home

Production Functions & Change in technology

Before showing this clip, students should have an understanding of a production function graph. They should understand the intuition behind the concave shape of the curve, and the difference between adding more inputs versus changing the technology altogether.

Start the following clip from *Cinderella* (2015) at the beginning:

https://www.youtube.com/watch?v=mYa6xHBX8Rs

Pause the clip at (1:55). Begin the following discussion and analysis:

- Assume we can draw Cinderella's initial production function if she were to attend the ball dressed in rags. (Sketch a standard production function on the chalkboard/whiteboard).

- Tell students that the fairy godmother represents "technology" to Cinderella—how do they think this will affect Cinderella's production function?

Resume the clip from (1:55) to the end. Follow-up discussion:

- Sketch the change after Cinderella experiences a change in technology (her makeover). What does "new" Cinderella's production function look like?

  ANSWER: Production function shifts upward. (See Figure 2 for similar Aladdin example) The transformation from the fairy godmother's magic ("technology") is something Cinderella could not have achieved on her own, no matter how many inputs were available. (For example, Cinderella cannot turn a pumpkin into a carriage, but her fairy godmother's magic can)