Do we really like the kind girls and animals?:
Cross-cultural analysis of altruism in folktales

Alexandra Arkhipova & Artem Kozmin

alexandra.arkhipova@gmail.com

kozmin@gmail.com

Centre for Typological and Semiotic Folklore Studies,
Russian State University for the Humanities, Moscow, Russia

Abstract

The current work is an approach to the problem of the existence and relevance of altruistic acts in the classic folktale. The general number of folktale types with altruistic content is lower than what could be expected. Different types of altruistic deeds are discussed. As a rule, the altruistic acts in the fairy tales are directed to supernatural beings, namely spirits and other magic creatures, not to humans. This research revealed that within many ethnic groups, included in International Tale Type Index, the number of recorded altruistic tale types among Germanic cultures is slightly lower than in other areas, what can be explained by the influence of Protestant ethic in this macro-region.

key words: cross-cultural research, folktale, statistics, altruism in the folktales

The kind of text we call the classical fairy tale already existed around three thousand years ago. In the "Egyptian Tale of the Doomed Prince," dated around 1,600 – 1,300 BC (Simpson, 1973: 85-91), the main character, the Prince, was doomed to be killed by a snake, a dog or a crocodile. Although he could have killed his faithful dog, the Prince refused to do so. Later on, he might have helped[1] another potential killer, the crocodile, win a fight with a water spirit that was threatening him. According to those fragments, the Prince performed one or more altruistic deeds and became a donor of altruistic acts. This is the oldest example of altruism in fairy tales we know of.

It is well known that humans and even animals (Boesch *et al*, 2010) can show an inclination to perform altruistic acts directed to other, even non-related, individuals. Social psychologists are interested in situations, in which humans reveal altruism, whereas anthropologists are focused on the indirect benefits that a society can get from the altruistic behavior of its members. Most investigations of altruism are based on experimental observations that seek to clarify why people behave altruistically or egoistically, and which environmental or cultural factors affect the degree and frequency of altruistic acts (see the detailed review by Piliavin & Charng 1990).

The authors of this paper, who are specialists in mythology and folklore, have a different approach to this question. We do not research real social behavior, altruistic

---

[1]   The crocodile asked the Prince for help, but unfortunately this papyrus does not state whether the Prince saved his life by helping the crocodile.

or not. Instead, we focus on the imagination, *i.e.* how people represent altruistic actions and transmit knowledge about them in the same types of text. More specifically, we try to understand if there is any altruistic behavior reflected in the folktale.

This leads us to the next question we need to answer: Why especially the *folktale* and not other folklore texts? In order to answer this question, we decided to investigate the distribution of altruistic acts in folktales. They are a widespread and easily transmitted folklore genre which have traditionally been retold orally, with a number of verbal stereotypes and clichés. Folktales are a rather ancient genre of folklore, which, in modern European cultures, began to be recorded in the 1700-1800 AD ((with the German tradition having the largest number of plots). In ancient cultures – Egypt, India, Persia, China – they began much earlier and were presented in a high number of ancient and medieval literature sources.

Finally, the only way to perform a statistically comparative analysis of folklore texts is by using folktale material. The high value of folktales for comparative research is highlighted by the availability of a huge database, the International Index of Tale Types (see details below).

It is also important to note that the relationship between folktales and social reality on one side, and actual mythology on the other, is quite complicated.
Folktales never reflect strictly ethnographic facts. For example, the most popular character in Russian fairy tales is Baba-Jaga, a type of forest witch who is very ugly, and sometimes kind and sometimes angry. But if you do field work in any village in the Russian North, you easily find out that local folks do believe in *domovoj* (a spirit of the house) and *leshy* (the spirit of the forest) – they worship and feed them, for example – but you will never find any actual mythological beliefs or magic practices connected with Baba-Jaga. "It is only for scaring the kids," say local people if you ask them. And despite intense academic efforts directed at finding ethnographic or archeological evidence of faith in Baba-Jaga, no traces have been found at all.

So we shouldn't conclude that finding altruistic elements in folk tales means that such events really existed in the historical past. We can infer only that people *have imagined them*.

A thorough review of the published literature on folklore studies reveals that the existence of altruism in folktales has so far not been reported. We found only one interesting research paper about relations between tales and altruism, but its main approach and aim was different – it investigates the altruistic tales that parents tell their children or, in other words, which models of altruism parents prefer to teach their kids. However, that paper deals rather with the conditions of parents' choice of the tales they tell and social behavior they teach rather than about folktales themselves (Palmer *et al.* 2006).

Another issue that remains to be evaluated is the correlation of altruism and folktales with social reality. In our opinion, the presence of altruistic acts or motivations in the folktale is an issue that deserves to be investigated. Another question to be addressed is the availability of a special areal distribution of altruistic acts in folktale types.

The material of this research: the International Tale Type Index and the database of folktale types

The kind of texts we call the *classical folktale* is very familiar to Western readers, who remember *Children's and Household Tales* by Grimm brothers. Grimm brothers use a word *Maerchen* as a genre label for their texts. Famous folklorist Stith Thompson in his *The folktale* describes *Maerchen* as "a tale of some length involving a succession of motifs or episodes. It moves in an unreal world without definite locality or definite creatures and is filled with the marvellous. In this never-never land, humble heroes kill adversaries, succeed to kingdoms and marry princesses". (Thompson 1977: *8*). Of course, this definition does not cover all *Maerchen* in the Grimm's book (for example, in *The Wolf and the Seven Young Kids* there is no hero who marries a princess).

In 1910, Finnish scholar Antti Aarne published his famous book *Verzeichnis der Maerchentypen*. Aarne and his followers (the Historic-Geographic School or so-called "Finnish School") had a rather practical task – to collect the plots (*tale types* in Aarne's paradigm) of European folktales, and a theoretical goal – roughly speaking, to trace the geographic origin of folktales. Although they never reached that goal, theirs was the first successful attempt to create a classification (or, more precisely, a catalogue) of folktales, including their areal distribution. Aarne's *Index*, renovated by Stith Thompson in 1961 (Aarne and Thompson, 1961), offers a systematic method for describing folk narratives, tracing their origins and suggesting ways of oral and literal transmissions.

However, Aarne-Thompson's Index version has a major problem with the geographical amplitude of ethnic groups: it was oriented to a limited areal distribution, namely to European and Asian folktales, *i.e.,* the texts which had already been collected and described by folklorists by the time it was created. According to Stith Thompson, "strictly, then, this work might be called *The Types of the Folk-Tales of Europe, West Asia, and the Lands Settled by these Peoples*" (Thompson 1961: 7).

Hans-Joerg Uther, who renovated Aarne-Thompson's system in 2004, mentioned that "it is self-evident that the revision must cover previously-proposed enlargements of the tale type system, and it must find a way to include the regions of Europe that have until now been underrepresented. Thompson barely considered Austrian and Swiss tales, neglected tales from Southern and Eastern Europe, and particularly Slavic tradition" (Uther). Nowadays, the Aarne-Thompson-Uther system (further *ATU*) covers, in addition to "the types of the folk-tales of Europe, West Asia, and the lands settled by these peoples," the Eastern and South European, Chinese and Siberian, and North African macroregions. We can see in ATU, for example, Mayan tales, although in most cases they were borrowed from Spaniards. Also, some versions of tale types from regions not connected to Europe are today included in the ATU. For example, the version of the tale type ATU 480 (*Kind and Unkind Girls tale*), was found in the Kapingamarangi atoll (Federated States of Micronesia), a place that has never been settled by Europeans, is now integrated into the system.

One can see that folklorists have managed to obtain a very large sample of folktales. Of course, we lack an exact definition of folktale genre, but that is a typical situation in many disciplines, e. g. there is no exact definition of a novel in literary theory etc.

But the Aarne-Thompson's system provide a way to deal with the material: we name a text folktale if its plot can be described in terms of the Aarne-Thompson's system.

Today's ATU index allows users to design a special database that matches the plots, the areal distribution, first records of tales and so on in a convenient way (see details in Kozmin, 2009). Our database now contains 141 ethnic traditions and 2,200 tale types, but is not a strict copy of the printed version of *ATU*, because ATU uses a lot of secondary literature. For example, the label "BP" in the plot descriptions of the printed version refers to the huge Bolte-Polivka volume of comments on Brothers Grimm Tales. This volume contains a lot of information about versions of a given tale in different European traditions, although in the database these references are currently omitted.

The results, which we will discuss in this paper, were obtained from our database.

Reciprocal altruistic act in the folktale

In order to make the process of investigation of altruism in folktales clearer, we need to first explain some terminological concepts.

There is some controversy about the right meaning of altruism and whether pure altruism exists or not[2] (see review of different theories in Piliavin & Charng, 1990). Some scholars highlight reciprocal altruism (Palmer *et al.*, 2006; Travis, 1970), while other argue that whenever the potential altruist already knows that his act can be reciprocated, no altruism is present at all. For example, if you meet an old lady begging for money in the street, you would probably give her a pair of coins. One could say that this is a truly altruistic act, but one could also argue that if you do not help her you will be tortured by a feeling of guilt because, for example, that lady reminds you of your grandmother. You benefit from this act because by giving her money you get a feeling of self-satisfaction, whereas not responding to her begging you leaves you conscience-stricken. In this situation, no altruistic act has occurred.

The authors of above-discussed review state that "they have been unable to agree on a single definition of altruism" (Piliavin & Charng, 1990: 29). According to them, one of the main problems with finding the right definition involves "the relative emphasis on two factors: intentions and the amount of benefit or cost to the actor" (Piliavin & Charng, 1990: 29).

In this chapter, the concept of *reciprocal altruism*, with the above-mentioned restrictions, is used as our definition**.** We should mention three important issues about reciprocal altruism in folktales:

i. Altruistic acts in folktales can be forms of reciprocal altruism. As stated by Palmer *et al.* (2006: 240) "Reciprocal altruism is an evolutionary concept used to explain altruism among individuals who may or may not be closely related. … altruistic acts

---

[2]   This discussion reminds us of a joke about an old lady, upon who coming into the church, lit a candle for God and then also put a candle to a devil pictured in the bottom of the icon. "What do you do, ma'm?" – asked the priest – "Why did you light a candle to the devil?" – "Just in case" – answered the old lady.

could be favoured by natural selection when they are likely to be reciprocated in a form that it is at least as valuable to … the altruist as the original act was costly." For example, just because of her good nature, a girl (*Kind and Unkind Girls tale, ATU 480*) helps an apple tree.

ii. In the reciprocal altruistic act, we see the presence of a donor and a recipient -- for example, the kind girl is the donor and the apple tree is the recipient.

iii. Reciprocal altruistic acts in folktales can be forms of reciprocal altruism in a non-clear way (*indirect reciprocal altruism*). The kind girl helps the apple tree get rid of its fruits and then she is obviously rewarded, but one never knows if the girl had known before about the second part of such a reciprocal act – the wise advice by apple tree.

How many different altruistic tale types do exist?

As we have already mentioned, our analysis is based on a special sample from our database of tale types, which includes 141 ethnic traditions and 2,200 tale types (plots) (see *Table 1*). The sample of plots containing any altruistic acts was based on experts' evaluation. Of course, several cases are still questionable, because we could not evaluate if this deed was altruistic or not. Although other scholars might obtain slightly different results, we are convinced that our results reflect reality.

Before going further, we need to ask, how many altruistic tale types exist? Are altruistic tale types rare or common?

We believe that most readers would predict a large number of altruistic plots. However, we found a very low number -- only 72 plots among 2,200 tale types, containing some altruistic ideas and motifs.

Table 1. Number of plots and altruistic plots in ATU

Total number of ethnic traditions in ATU	141
Total number of plots	2200
Number of altruistic plots	72

Why do most people have such expectations? This might be the case because several very popular plots with altruistic topics are widely spread. For example, we all know the Kind and Unkind Girls tale type, whose versions can be found in more than 900 versions (Roberts 1958) (*Figure 1*).

Figure 1. Areal distribution of the Kind and Unkind Girls tale type (ATU 480)

The fact that in the ten most popular fairy tales, there are at least two altruistic plots (*Figures 1 & 2*) might lead readers to think that altruism in folktales is widely spread, but that is only an illusion.

The second popular tale type among the altruistic group that is depicted in *Figure 2* is a *The Magic Ring* (ATU 560): A boy buys a dog, a cat, and a snake in order to save them from death (he rescues a snake from burning, for example). In return, he receives a magic ring (stone) from the king of the snakes (who is the father of the rescued snake), which will grant all wishes. With this ring, the boy builds a magic castle and performs impossible tasks (building a bridge of glass, a church of wax, and so on in addition to the magic castle) in one night. Then he marries the princess, but she has a lover, and so the adventures of our hero continue.

Figure 2. Areal distribution of the Magic Ring tale type (ATU 560)

The ten most popular altruistic tale types are listed in the following table. These cases are widely spread in different traditions (Table 2).

Table 2. Top-10 of the popular altruistic tale types

Title of the altruistic plot	Number of traditions including this altruistic tale type
The Magic Ring (ATU 560)	82
Kind and Unkind Girl (ATU 480)	82
The Grateful Animals (ATU 554)	81
Bird, Horse and Princess (ATU 550)	79
The Clever Horse (ATU 531)	76
The Faith of the Lion (ATU 155)	74
The Man Who Understands Animal Languages (ATU 670)	72
One-Eye, Two-Eyes, Three-Eyes (ATU 511)	70
The Smith and the Devil (ATU 330)	68
The Faithless Sister (ATU 68)	68

Donors and recipients of the altruistic acts in fairy folktales

Traditional cultures are built on a system of reciprocal gift exchange (Mauss, 1935). Such a system makes the existence of reciprocal altruism both possible and highly valuable, not only directly, in a physical way, but also indirectly, in a symbolic way. The altruistic behaviour of individuals is rather typical within a traditional-oriented society. Different kinds of reciprocally altruistic acts can be found either directed from a person to his/her relatives, or among non-related individuals.
It's logical to expect the same situation in folklore – at least the abundance of altruistic acts and the existence of gift exchange. However, in folklore the situation with altruism is completely different.

In the fairy world, two human beings almost never become the donor and the recipient of an altruistic act as it happens in normal life. For example, in any human society an orphan baby would always be adopted by an adult. In contrast, in the fairy world, children who have lost the support of adults are often simply abandoned by humans, and then are luckily found by a supernatural creature, which takes care of them.

Plots where one person helps another are astonishingly rare: only in two cases within our database (ATU 516C[3], 864[4]) does a human character help another person. And, except in those two examples, it is rather difficult to find a situation where a man helps his relatives. The opposite situation, where humans affect each other, is quite common. For instance, readers may remember a number of tale types about older brothers who try to abandon or to kill a younger sibling, as in the case of Joseph and his brothers.

Who are the donor and the recipient of altruistic acts in folktales? Instead of *animal tales*, which are allegorical and feature at least two creatures, in *fairy folktale*s, which highlight opposition between natural and supernatural worlds, the altruistic act occurs between the main character, who is a human, and an animal/magic creature or a person with some hidden or obvious supernatural power. The non-humans (animals or other magic creatures) can be recipients of altruistic acts or donors. When Ivan feeds the Grey Wolf with his horse, and the Wolf becomes his helper in return, the Grey Wolf is initially the recipient of Ivan's altruistic act, but then becomes the donor. The same applies to the traveller who saves animals from the death, and is rewarded by the animals in return.

---

[3] *Amicus and Amelius***:** Two friends who look exactly alike assist each other in time of need. When one of them, who in older versions is named Amelius, is challenged to a sword-fight, the other, Amicus, who is a better swordsman, takes his place. Amelius remains behind with Amicus's wife, and puts a sword in the middle of the marriage bed at night. Amicus wins the fight for his friend. Later, Amicus contracts leprosy. An angel tells them that he will be healed if he bathes in the blood of Amelius's children. Amelius cuts off their heads to save his friend. The children are restored to life (ATU, 516C)

[4] *The Falcon of Sir Federigo.* The nobleman Federigo Alberighi loves Monna Giovanna, but she does not return his love. He spends all of his wealth to woo her, until he is left with only his falcon, which is one of the best of its kind. When Giovanna's sick son wants the falcon, she goes to ask for it. In order to gain her favor, Federigo, unwittingly serves her his precious falcon to eat. When she makes her request known it is too late, but she is so impressed by his generous attitude that she changes her mind, and chooses him as her husband (ATU, 864).

In almost all cases where magic creatures are donors at the beginning of a story, the first element of the donor-recipient relations exists but is reduced. For example, Ivan met an ugly old lady in the forest and, unlike his brothers, treated her politely. In return, the lady gave him wise advice or gave him the right directions. In this example, the old lady was initially the recipient of an unclear altruistic act (Ivan's courtesy to her), and only then she became the donor.

Sometimes, the protagonist must even be taught how to ask supernatural creatures for help. Tsarevich Ivan is advised by a helper (for instance, his late father) what he should say to Baba-Jaga, the forest witch, so that he can be rewarded instead of being eaten.

The worldview of the fairy tale contrasts dramatically with the rules of traditional society. An altruistic act whose donor is a human is almost never directed to the human world, but almost always addressed to representatives of supernatural world, and vice versa.

This tells us that the main moral of fairy tales concerns how to contact spirits – feed them or behave in an extra-polite way or, in other words, *treat supernatural powers or magicians well and they can help you in return!*

When altruistic acts in the folktale end badly

We should remember that Aarne–Thompson-Uther's Tale Type Index organizes plots into very broad categories like *Animal Tales*, *Fairy Tales*, and *Religious Tales*. Within each category, folktale types are subdivided by motif down to the level of individual types.

This type of classification was criticised very severely by Vladimir Propp, Alan Dundes, Hans-Jorg Uther and a number of other scholars, but we still intuitively understand the difference between an allegory about animals (even if they talk and behave like humans) and fairy tales with princesses, dragons and heroes. A typical example of animal tale is "Ice house," in which a fox builds himself a fine house of ice. A hare (or wolf, fox, bear, sheep, goat) builds a house of wood (or stone, iron, grass, wool). When summer comes, the fox's house melts, and he goes to live in the hare's house, and gradually pushes the hare out. In addition to the difference in morphological structure between animal tales and fairy tales, there is also difference in origin. The origin of the animal tales is believed to be related to mythological stories about tricksters' tricks (Raudin, Meletinsky, Berezkin).

From the main character's point of view, altruistic acts in animal and fairy folktales can be part of a winning or losing strategy. The story about the Kind Girl and the apple tree is an example of the winning strategy because, as a result of the altruistic act, she received wise advice from the tree and won, whereas her sister refused to help the tree and therefore lost.

A strategy of winning altruism is popular among fairy tales and so-called religious tales (59 cases). But 14 tale types, most of which are animal tales and only a few of which are fairy and religious tales, included altruistic acts which ended badly. Such an example is the ATU tale type 43 (see *Figure 3*),

Table 3. Winning and losing strategies in altruistic animal and fairy tales

	Animal tales	Fairy and religious tales
Number of tale types with winning strategy	3	56
Number of tale types with losing strategy	12	1
Total number of altruistic plots	15	57

Figure 3. Areal distribution of the Ice House tale type (ATU 43).

One of the differences between fairy tales and animal tales is in the diverse usage of altruistic acts. In fairy tales, the altruistic act is a trigger which starts the protagonist's quest: at the beginning the actor helps magic animals, and afterwards he receives benefits. In animal tales, the altruistic act is an initial part of the trickster's work, which very often has a bad ending for the donor of the altruistic act. As with the case of the above analysed donor-recipient relation in the fairy world, in the world of tricksters, the trickster parodies the normal communications of human world.

Who doesn't like altruistic folktales?

One can predict that the number of altruistic plots depends on the total number of plots in a given tradition. A first look at the data presented below (*Table 4*) apparently confirms this impression. However, a deeper look into the areal distribution of altruistic plots reveals a slightly different picture.

Table 4. Top-20 of ethnic groups, containing altruistic acts

Ethnic group	Total number of plots	Number of altruistic plots
German	1 408	48
Latvian	1 122	45
Finnish	1 140	45
Hungarian	1 029	40
Ukrainian	860	40

French	837	39
Greek	877	37
Russian	815	37
Polish	754	36
Irish	741	36
Spanish	1 042	36
Italian	847	35
Lithuanian	923	34
Jewish	882	34
Czech	571	33
Swedish	727	33
Belarusian	622	33
Gipsy	504	31
Bulgarian	854	31
Slovakian	520	30
Chinese	540	30
Catalonian	604	28
Estonian	778	28
Indian	717	27

In order to correctly answer this question, we need to check to see if there is a correlation between the areal distribution of altruistic plots and other important parameters. That is not a simple task, and requires a rather complicated statistical procedure.

The first step is to find the fraction of such tale types within the general tradition. When we started to calculate this fraction, we confronted a problem typical for the statistical processing of results in social sciences: validation of the results is restricted by the fact that not all traditions have the same number of tale types. This problem is especially acute for traditions with a low number of tale types. For example, if in one of those traditions, there is only one altruistic tale type out of a total of three entries, the probability of an error is high as result of chance. To avoid the above-mentioned limitation, we validated our results by performing a principal component analysis, which is a mathematical procedure that allows us to convert a set of observations of possibly correlated variables into a set of values of linearly uncorrelated variables called principal components. The transformation is defined in such a way that the first principal component has the largest possible variance (Shaw, 2003).

In our database, which includes 2,200 tale types and 141 ethnic groups, we identified a total of ten factors for assessing the traditions. A group of tale types appearing at a given frequency in the same ethnic groups is referred to as a "factor".

For example, we identified a group of tale types in "factor 5", which can also be called "Iberian" since they are found with a high probability in Spanish, Catalonian, French and Portuguese traditions, and nowhere else. Tale types 159A, 285E, 186, 2B and 157C* are found only in the Iberian group. One example is ATU 189 -- *The monkey and the nut.* This tale, in which a monkey throws a nut away because it has a bitter shell, and overlooks the edible kernel, is presented only in the Spanish and Catalonian traditions. In such a way, in the European set of tale types, several components can be highlighted. This allows us to distinguish which types are specific for each region. Consequently, the principal component analysis (PCA) allows us to distinguish "geographically-susceptible" tale types.

In a next step, we looked for correlations between the fraction of altruistic tale types and various factors. We found several significant (but weak) positive and negative correlations.

What does it mean when we see a negative correlation between the fractions of altruistic tale types and a factor? It means that among geographically-specific tale types or a given area the number of altruistic types is lower than it could be expected. Conversely, a positive correlation means that the more geographically-specific tale types exist, the higher is the probability of finding altruistic ones among them.

As a result, we found a negative correlation between the "North Germanic – East European" factor and the altruistic plots fraction: it is very significant ($p < 0.05$), but weak (-0,184). In this factor German, Frisian, Dutch, American, English, Flemish and Danish traditions have maximum factor scores. On the other hand, Bulgarian, Estonian, Latvian, Belarusian, Lithuanian, Russian and Ukrainian have minimum factor scores. Therefore, Factor 2 allows us to distinguish between North Germanic and East European traditions. It should be noted that this distinction is based on about 400 plots (in more technical terms, this principal component explains 19% of the variance). In simple terms, the North-Germanic set of traditions dislikes altruistic tale types, whereas the East-European one, in contrast, likes to use them. However, this does not depend on the absolute number of tale types in given traditions, we talk about only geographically-specific tale types that distinguish these two major areas!

The second correlation is also negative, significant ($p < 0,05$), but week (0,14). It is associated with Factor 3. Factor 3 differentiates "South" traditions (Spanish, Jewish[5], Indian, Egyptian, Greek, Portuguese, Italian), which have maximum factor scores, from "Baltic" traditions (Lithuanian, Swedish, Estonian, Latvian, Finnish), which have minimum scores. It means, again, that "Baltic" set of tale types is "less altruistic" than the "South" ones.

In both cases we deal with Germanic and Baltic cultures (German, Frisian, Dutch, American, English, Flemish, Danish, Swedish, Estonian, Latvian and Finnish), where the parents preferred to tell their kids stories in which the main character saves himself by his own efforts rather than sits and waits for altruistic help from magic creatures. That is a possible reason why the collectors of classic folklore there recorded a slightly lower number of altruistic tale types than in other regions during the last 200 years, even if the total number of recorded folktales is high. It is noteworthy that these are countries where Protestantism was widely spread (with exception of Latvia) during the last 300 years. Protestant beliefs are based on the ability of the individual's own abilities and support rational pursuit of economic gain (Weber 1930). It could be hypothesized that Protestantism does not admire people who passively wait for help from others, even in folktales.

---

[5]   Near East Jewish communities.

Literature

Aarne, Aantti, & Stith Thompson (1961). The *Types of the Folktale: A Classification and Bibliography*. Helsinki: The Finnish Academy of Science and Letters.

Boesch C., Bolé C., Eckhardt N., & H. Boesch (2010). "Altruism in Forest Chimpanzees: The Case of Adoption" in *PLOS ONE.* Vol. 5(1). e8901.

Choi J. K. & S. Bowles (2007). "The coevolution of parochial altruism and war" in *Science*. Vol. 318. Pp. 636–640.

Dundes, Alan. (1997). "The Motif-Index and the Tale Type Index: A Critique" in *Journal of Folklore Research* 34(3): 195–202.

Palmer Craig T., Jennice Wright, Scott A. Wright, Chris Cassidy, Todd L. VanPool and Kathryn Coe. (2006). The Many Manipulations of Morty Mouse: Children's Stories and the Parental Encouragement of Altruism in *Journal of Anthropological Research.* Vol. 62, No. 2 (Summer, 2006), pp. 235-257.

Piliavin, Jane Allyn and Hong-Wen Charng (1990). "Altruism: A Review of Recent Theory and Research" in *Annual Review of Sociology*, Vol. 16, pp. 27-65.

Propp, Vladimir (1958). *Morphology of the Folktale,* ed. Svatava Pirkova-Jakobson, trans. Laurence Scott, Bloomington, Ind. : Research Center, Indiana University, 1958. 134 p.

Roberts, Warren Everett (1958). *The Tale of the Kind and the Unkind Girls: AA-Th 480 and Related Titles*. Berlin : W. de Gruyter, 1958. 164 p.

Shaw P. (2003). *Multivariate statistics for the Environmental Sciences*, London: Arnold, 233 p.

Simpson, William Kelly, ed. (1973). *The Literature of Ancient Egypt: An Anthology of Stories, Instructions, and Poetry*. Trans. by R.O. Faulkner, Edward F. Wente, Jr., and William Kelly Simpson. New Haven and London: Yale University Press. 328 p.

Thompson, Stith (1977). *The Folktale*. Berkley: University of California Press. 510 p.

Uther, Hans-Jorg (2004). *The Types of International Folktales. A Classification and Bibliography*. Parts I-III. Helsinki: The Finnish Academy of Science and Letters. *3 vol.*

Weber, Max. (1930). *The Protestant Ethic and the Spirit of Capitalism*. Unwin Hyman, London & Boston. 293 p.