

# The Myths of “Fiat Money”

Dror Goldberg

Department of Economics

Texas A&M University

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## Abstract

The paper re-evaluates the conventional wisdom regarding the existence of moneys that supposedly circulated without any legal support or intrinsic value. Such objects, called “fiat money” by economists, may have never existed. I re-examine dozens of examples of “primitive moneys” (i.e., neither paper nor coin) discussed in Einzig’s comprehensive survey, all of which would seem intrinsically useless to a modern layperson. I find that none of these cases is a conclusive evidence of “fiat money.” A general conclusion is that one needs to seriously study the society in question before making a claim that it has used “fiat money.”

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“Even generations later, when no one alive had ever seen this stone, the claim to this [stone] was still valued in exchange.”

N. Gregory Mankiw (2003)

“Science must begin with myths – and with the criticism of myths.”

Karl R. Popper (1957)

## **1. Introduction**

Economic theories and models often feature ideal concepts such as perfect competition, complete markets, and lump-sum taxes. Such abstractions are useful simplifications of reality for many purposes. Most economists agree that these concepts are fictional. Monetary economics has an ideal construct of its own. It is what economists call “fiat money.” This is an object that has no intrinsic value and is not convertible into anything. An implicit assumption in the definition is that no one is forced to use such money in transactions and that the money has no other legal status whatsoever<sup>1</sup>. Acceptance of such money is entirely discretionary and based exclusively on the expectation that others would accept it too, even though no one else is forced to accept it<sup>2</sup>.

Interestingly, monetary economists do not claim that their “fiat money” concept is fictional. On the contrary, they completely identify it with the modern money we use in reality. Legal scholars and laypersons call the money we actually use by the same name

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<sup>1</sup> By “other legal status” I mean legal tender (i.e., the money can be used to pay debts, taxes, and fines), and laws that force buyers or sellers to use the money in spot transactions. I do not consider a monopolistic or an exogenous supply of money as “legal status” of that money.

<sup>2</sup> See Wallace (1980) for a famous discussion.

since “fiat” refers to its status as legal tender. Monetary economists have largely ignored this status. They have proven in their models that *in theory* legal status is not necessary for an intrinsically useless money to circulate<sup>3</sup>. Moreover, they have claimed that legal status is not necessary *in reality* either. Since modern moneys do have a clear legal status<sup>4</sup>, monetary economists have based the latter claim on stories that there have been cases of non-modern moneys that were identical to the “fiat money” concept used in monetary theory. Such claims and allusions have been made by some of the most prominent monetary economists<sup>5</sup> in almost every form of publication, and the issue serves as a very rare example of consensus in the field of monetary economics.

This paper re-evaluates such evidence on non-modern money. The classic reference on such money is Einzig (1966). His book, *Primitive Money*, defines “primitive money” as any object that is not paper or coin, and supposedly functioned as money somewhere in the world at some point in time. Einzig’s book attempts to provide a complete list of all primitive moneys that have ever existed (regardless of whether they were “fiat” or not).

Among all the evidence that he reports, I treat those objects, and only those objects, whose descriptions in Einzig’s book would likely make them seem intrinsically useless to

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<sup>3</sup> In Goldberg (2007) I show that the theoretical models in which “fiat money” circulates lose most of their predictive power and significance once many potential “fiat moneys” are allowed to exist in the model. I also claim there that *in reality*, since there are many potential “fiat moneys,” some legal status (specifically, receiving the money for taxes) is crucial for money that is intrinsically useless and not supported in any other legal way.

<sup>4</sup> See Goldberg (2005) for details.

<sup>5</sup> E.g., Friedman, Keynes, Tobin, Wallace, Townsend, Mankiw, Kiyotaki and Wright. See references and details below.

an average modern Western layperson. There are more than fifty such objects. Objects whose intrinsic value is obvious to such a reader (be it practical use, like rice, or esthetic value, like gold) are not mentioned here, even if their use as money *is* surprising<sup>6</sup>.

The main result of the paper is that there is no conclusive evidence—among all those cited by Einzig—that what economists call “fiat money” has ever existed. The leading problem is that some goods were intrinsically valuable to their users, but not to us. Many times the fault lies with the Western settlers, travelers, diplomats, and missionaries, who reported the use of these goods as money, and were not as open-minded as anthropologists. Some examples are false because the laws, customs, religion, and trade relations of the money’s users are ignored. Other problems include non-credible or uncorroborated evidence, and objects that actually were not what economists regard as money. Most cases have more than one of these flaws.

The main conclusion of the paper is more general: a comprehensive anthropological, historical, and legal survey of the society in question is necessary before we jump to the conclusion that this society has used “fiat money.” This is important because the evidence reported by Einzig is probably not all the evidence that exists out there in innumerable writings about all human societies that have ever existed. If new evidence comes to light, one should keep this conclusion in mind and evaluate the new evidence accordingly.

This work is similar in spirit, and somewhat analogous, to Garber’s work on “famous first bubbles.” Garber (1989, 1990, 2000) takes a critical look at the Dutch tulipmania, the Mississippi Bubble, and the South Sea Bubble. Generations of economists have been

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<sup>6</sup> I also abstract from cases of a “fiat element,” where a metallic coin has a higher face value than the true value of its metal; I treat only cases of complete “fiat-ness.” Whether or not Einzig claimed that the object

raised on the belief that these mythical episodes are a clear proof of the power of speculation in financial markets, but Garber finds that economic fundamentals can explain these episodes. Similarly, economists are being taught that money can circulate based purely on people's speculation that others will accept it too, with the proof supposedly coming from the experience of primitive societies. I find that physical, legal, and religious "fundamentals" can explain the circulation of all primitive moneys.

The paper is organized as follows. Section 2 discusses methodological issues. In Section 3 I start the survey with the most colorful and popular myth of all—the stone money of Yap—because prominent economists have mentioned it as a classic example of "fiat money." In Section 4 I discuss shell money, also mentioned in modern monetary literature as an example of "fiat money." Next, I list all the other cases, some of which might surface one day in the mainstream monetary literature as examples of "fiat money<sup>7</sup>." These are seemingly useless variants of skins, cloths, heads, other organic materials, and minerals (Sections 5-9, respectively). Section 10 concludes<sup>8</sup>.

## **2. Methodology**

Typically, where the existence of something is disputed, be it extra-terrestrial life forms or Iraqi weapons of mass destruction, it is expected that those who claim for its existence will provide a positive proof. "Fiat money," however, is completely defined in *negative*

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under consideration was "fiat money" is not taken into account in my choice of objects.

<sup>7</sup> After giving the example of the stone money of Yap, Friedman (1992) writes that "numerous additional [examples] could be listed" (p. 7).

<sup>8</sup> I provide here only the minimal number of references needed to substantiate my counter-claims regarding "fiat money" claims. In most cases I have more references and details, and these are available by request.

terms: it is not useful, it is not convertible, and it does not have any other legal status. Therefore, given a claim of a particular “fiat money,” my task is to show the existence of usefulness, convertibility, or other legal status<sup>9</sup>.

In many cases I am able to disprove a “fiat money” claim conclusively. In other cases, the only source who reports on the use of the money fails to provide enough additional information on the society in question to allow dispute of his/her claim, and no one else provides such information before the society in question becomes extinct or stops using that money. The source’s own failure to fully report on relevant laws, customs, and fashions, might make it impossible to disprove such a “fiat money” claim beyond a reasonable doubt. Therefore, it seems fair not to require such a high burden of proof. Instead, my goal was to cast enough doubt on each and every “fiat money” claim such that the reader will agree that it is *more likely than not* that this claim is false.

There are two ways to disprove, or at least cast a serious doubt on, a claim of “fiat money.” It can be claimed that it is either not “fiat” (the way this word is used in economics) or not money. To claim that some money is not “fiat,” it needs to be shown that there are reasons other than pure speculation that can create positive demand for it, independently of its monetary use. There are ten such sources of demand.

1. Practical use: an object has it if it is a consumption good, a production factor of a good or service, or a raw material used in the production of a consumption good<sup>10</sup>.

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<sup>9</sup> Broadly defined, “legal status” can mean either human law or divine law. See below for details.

<sup>10</sup> I never resort to easy “solutions,” such as claiming that everything can be used as burning material or paper weights. This would a-priori preclude any possibility of “fiat money.” I mention only actual uses.

2. Esthetic value: an object has it if it is commonly used as jewelry, statues, or other decorations. This includes raw materials, such as natural gold lumps and gold coins. Whether it is actually used, kept in a safe, or displayed in a museum, is irrelevant.
3. Showing-off value: an object has it if its display induces respect or admiration for the possessor, or fear from the possessor—and not because the object has esthetic value. Examples include gold medals and war decorations.
4. Religious value: an object has it if some religion declares it, its origin, or its use, as divine or sacred. A believing seller may be too afraid to reject it as payment.
5. Religious use: an object has it if some religion orders its use in rituals.
6. Legal tender: an object has this status if it can / must be used for unilateral payments of obligations: contractual debts, taxes, fines, tributes, and blood money<sup>11</sup>. Possession of such an object allows one to avoid being punished by the authorities for non-payment.
7. Forced on buyers: this source of demand exists if some object must be used as payment by buyers of some very important goods or services<sup>12</sup>. This is the cash-in-advance constraint of monetary models.
8. Forced on sellers: money is forcibly accepted if the law requires all sellers to accept it in all transactions. This usually happens in totalitarian countries.
9. Convertibility: an object has it if its issuer promises to convert it upon demand into an object that has esthetic value or practical use.

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<sup>11</sup> This is not identical to modern legal tender status, in which a currency is legal tender for the payment of a contractual debt only if the debt has been denominated in that currency.

<sup>12</sup> In some societies this includes payment for wives and for an officially high social status.

10. Voluntary convertibility: an object has it if for some users none of the categories above apply, yet at least one of those categories applies to some of their trading partners. The former can then expect to be able to trade this object for other goods with the latter (e.g., use of cigarette money by non-smokers)<sup>13</sup>.

Whenever we read evidence of some money, we need to consider the following hypothetical situation: an individual lives in a society that uses this money, when one day all private spot traders suddenly reject it as money from then on. The basic question that needs to be asked is: can it still be optimal for the individual to accept it? If yes, then this is not “fiat money.” In many cases, while the answer has always been positive, the particular default use or value of the money has changed over time: the object was first considered to be practically useful or esthetically valuable, and by the time it lost these uses and values to superior materials or changing tastes it had already made it into the local laws, customs, and religion. This “has-been” hypothesis is a recurring theme in this paper.

Even if an object is “fiat,” perhaps it is not what economists regard as money, or at least not a medium of exchange<sup>14</sup>. A doubt can also be cast if there is only one uncorroborated source to the “fiat money” claim. In some cases, this source is not only unique but also not trustworthy for various reasons.

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<sup>13</sup> Note that this concept is more general than having a neighbor who is a consumer of that good. It also includes a neighboring society which does not consume that good but gives it, say, a legal tender status.

<sup>14</sup> This is the only aspect of money that I am interested in, since the motivation for this paper comes from the use of “fiat money” as a medium of exchange in modern monetary models. For the same reason I ignore the vast anthropological literature on the definition of money. I take as given the definition of mainstream monetary economists.

As explained above my goal has been to show that any “fiat money” claim is more likely than not to be false. I have tried to come up with counter-claims in each of the above categories to the point where I reached this threshold. In some cases Einzig himself cites conclusive counter-claims, while in other cases it was necessary to check Einzig’s sources and others, and conduct a more comprehensive study of the society in question.

### **3. The Stone Money of Yap**

Yap (or Uap) is an island in Micronesia. A story regarding the money on that island is very popular among economists. The main source is Furness (1910). Excerpts from his book, *The Island of Stone Money*, were reproduced in *The Economic Journal* (1915). Prominent economists give it as an implicit or explicit example of fiat money in various publications: Friedman (1992) in the opening chapter of his last monetary history book, Tobin (1992) in an economic dictionary, Keynes (1930, p. 292) in a monetary theory book, and Mankiw (2003) in an undergraduate macroeconomics textbook<sup>15</sup>. The story includes two “fiat money” claims: the money itself, and a story that a verbal claim to a lost unit of that money also functioned as money<sup>16</sup>.

#### **3.1. The Stone Money**

Furness reports that the money on that island was huge round stones of no practical use. In pictures they look like millstones, but were never used as such because no mills

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<sup>15</sup> Keynes refers to “the stone money of Rossel Island,” but it is obvious that he means the stone money of Yap. Rossel Island did have an equally interesting shell money (see below). Wallace (2000, 2001) also refers to “stones,” which are presumably these ones. There are no other famous stones.

<sup>16</sup> Einzig discusses the money itself in pp. 36-40, and does not mention the story of the lost stone. I discuss it here anyway because it is popular among economists.

existed there. A careful reading of the reports of Furness and others shows that it is not the ultimate example of “fiat money” that economists think it is. Most importantly, these were not simple stones found on the island. The natives sailed hundreds of miles to other islands to find a unique limestone and carved out disks from this stone. They did so because they considered the stones to have high esthetic value. Yap’s official website<sup>17</sup> describes the stones as “crystalline.” Furness actually describes the stones as having a “white, opaque appearance, somewhat like quartz, but not so translucent nor of so fine a grain<sup>18</sup>”. Other travelers, traders and anthropologists describe the stones as “glistening,” “like large crystals of quartz,” “quartzose,” and “shining . . . quartz-rock<sup>19</sup>.” Was it worth it to go through so much trouble for stones that are at best semi-precious<sup>20</sup>? For Pacific islanders who knew no metals or precious stones—apparently it was<sup>21</sup>.

There is evidence from archeology, jewelry, and legends, that the first stones were small and substituted for shell money. The arrival of more material enabled making large statues. The full moon shape was chosen as it was both meaningful in the local religion, and convenient to transport<sup>22</sup>. Most discs ranged from one foot to two feet in diameter, although many had more extreme diameters, from two inches to twelve feet. Some of the

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<sup>17</sup> <http://visityap.com/indexhistory.htm> (2005).

<sup>18</sup> P. 94. This paragraph was not included in the excerpts cited in *The Economic Journal*.

<sup>19</sup> Tetens (1958), pp. 62-63, cited by Gilliland (1975), p. 4; LeHunte (1883), p. 25, cited by Gilliland, p. 8; Swanston (1883), p. 8, cited by Gilliland, p. 9; Christian (1899), p. 300; respectively.

<sup>20</sup> The best stones are described as “semi-transparent and fairly smooth” (Swanston [1883], p. 8; cited by Gilliland, p. 9), “stone with small crystals” (Muller [1917], p. 129; cited by Gilliland, p. 10), “polished to a very smooth, almost enamel-like surface” (Gilliland, p. 10), and “sparkling” (Gilliland, p. 10).

<sup>21</sup> In another Oceanic island, Eromanga, quartzite stone money was used as bride money (Einzig, p. 51).

large stones were not money at all, as they were “entirely beyond price<sup>23</sup>.” This is another proof for the high esthetic value of that material. Einzig states that there is no practical use to the stones, but one traveler said they were used as thrones<sup>24</sup>. In many societies gold was considered to be esthetically valuable, it was not fit for use as tools or weapons as it was too soft, and one of the few things one could do with it was sit on a throne made of it. The equivalence between gold and the Yap stone is apparent<sup>25</sup>.

Regardless of any esthetic value, the stones had a legal tender status for tax payments<sup>26</sup>. In addition, strict norms were established over time regarding the mandatory use of the stones for payments on special occasions such as festivals, weddings, and chiefs’ funerals<sup>27</sup>. According to the island’s official website<sup>28</sup> they are still in such use today, as well as for land purchase, side by side with the official currency (U.S. dollars). Finally, the stones had a religious value. One local legend says that the bodies of the islanders’ ancestors, which were half-human and half-divine, have *become* the oldest stones. Another legend says that the Fairy Godmother of Yap chose which stones would become money, and the stones’ shape was also approved by her<sup>29</sup>.

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<sup>22</sup> Gilliland, pp. 19-20.

<sup>23</sup> Einzig, p. 40.

<sup>24</sup> Einzig, p. 37; Kotzebue (1821), p. 182, cited and discussed by Gilliland (p. 3); respectively.

<sup>25</sup> Friedman (1992) also claims that gold and Yap stone are equivalent, but he does that by ignoring the esthetic value and legal tender status of both.

<sup>26</sup> This refers to taxes by both chiefs (Einzig, p. 39), and the colonial German regime (Furness, p. 99).

<sup>27</sup> Gilliland, pp. 11-12.

<sup>28</sup> <http://www.visityap.com/info.htm> (2005).

### 3.2. The Lost Stone

The story that one stone was forever lost at sea, and yet a claim to it retained its “purchasing power” (as Furness puts it, p. 98), is a separate “fiat money” story: a verbal claim to a lost asset is used as money. It is emphasized by Friedman, Keynes, Tobin, and Mankiw. A careful reading of the story reveals that it is not a case of “fiat money” at all. On p. 97 Furness tells us about the owners of the claim to the lost stone: “A family whose wealth was unquestioned—acknowledged by everyone.” The stone was lost “two or three generations” before Furness’ visit, and the original owner of the stone was “an ancestor of *this* family” (my italics). This seems to imply that the claim to the lost stone remained with the same family for two or three generations without being used in trade. Therefore it cannot be considered a medium of exchange. Everyone’s claimed acknowledgement of that family’s wealth may have affected its social status, but did not realize in trade. There is no documentation of any transaction actually made with the claim to the lost stone. Furness speaks of “purchasing power,” but he was not an economist.

Another problem hides in the story: Furness (pp. 97-98) says that the family’s ancestor shipped the stone to Yap and on the way to Yap the stone was lost at sea during a storm. When the sailors came back to Yap “they all testified” that the owner was not guilty of its loss, and “thereupon it was *universally conceded* in their simple faith that the mere accident . . . ought not to affect its marketable value” (my italics). This description of the testimony and the universal conceding that the value of the lost stone remains hints of a public event in which all the natives made a *centralized* decision. This is entirely

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<sup>29</sup> Walleser (1913), p. 616, cited by Gilliland, p. 19; Christian (1899), p. 300; respectively.

equivalent to modern legislation that declares that some object *must* be accepted as payment; such an object is not the “fiat money” of monetary models.

Finally, there are serious problems with the credibility of the story. Furness is presumably the only outsider who heard it from a native, and this native was not the owner but a man who lived in a nearby village. Furness starts the story in the following way: “My faithful old Friend, Fatumak, assured me that . . . .<sup>30</sup>” This “faithful” person was the local fortune-teller and exorcist<sup>31</sup>. He also assured Furness about his “knowledge” of how the island was physically created, while Furness finds that even for a fairy-tale this latter story is ridiculous<sup>32</sup>.

#### **4. Shells**

Shells of many types—especially seashells—were among the most common forms of primitive money. They were used in most parts of the world as both jewelry and money, to the surprise of Europeans who thought they were intrinsically useless<sup>33</sup>. They were eventually used as money by many Europeans, and by others who did not appreciate their esthetic value, because they were voluntarily convertible by so many other peoples<sup>34</sup>.

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<sup>30</sup> Furness, pp. 96-97.

<sup>31</sup> Furness, pp. 126, 154.

<sup>32</sup> Fatumak starts with: “What I am now about to tell you I know is just what really happened” (Furness, p. 143). He then goes on to tell of the role of cats in the creation of the island by God (p. 145). Furness notes (p. 146) that cats first arrived to the island with white traders, no more than twenty years before his visit.

<sup>33</sup> Einzig, p. 555. Shells of snails, turtles, ostrich eggs, and coconuts, were also used.

<sup>34</sup> See Stearns (1869), p. 5, regarding the use of shells by English traders, and Einzig, p. 158, regarding their use by Congolese natives who did not use them as jewelry.

Shells are sometimes alluded to as an example of “fiat money<sup>35</sup>.” Here I discuss in detail the famous cases of American seashells and those of the Pacific Kula Ring, and then discuss the only three other cases where the shells were supposedly not used as jewelry.

#### **4.1. North America (East Coast)**

Wampum seashells were used by both Native Americans and settlers. As for the natives, they thought the wampum had high esthetic value. They did not simply collect the shells on the shore and start trading them as tokens; they put great effort into polishing and piercing them with their stone-age tools, and then strung them for use as ornaments. They did not know how to process precious metals, so this dual esthetic-monetary use of shells should not be surprising. The natives also gave the shells a status of a unique legal tender in payments of debts, fines, blood-money, ransom, and tributes. It was customary to exchange shells at the conclusion of treaties. The shells also had a religious use: they were buried in graves and burned in funeral pyres<sup>36</sup>. All these uses guaranteed the wampum’s value even when the Europeans brought with them precious metals that could have replaced the seashells in their original esthetic use. In fact, just as the Europeans thought the shells to be intrinsically useless, some Native Americans thought the European silver dollars worthless and laughed at the Europeans who valued these coins so dearly<sup>37</sup>.

While the settlers did not see any esthetic value in the wampum, they nevertheless used it because it was voluntarily convertible by the natives, who were always willing to

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<sup>35</sup> E.g., Kiyotaki and Wright (1991, 1993), Wallace (2000, 2001).

<sup>36</sup> See Einzig, pp. 165, 172-173, regarding all the information in this paragraph.

<sup>37</sup> Felt (1839), p. 250.

trade skin and fur for it<sup>38</sup>. In fact, the settlers themselves made the shells legal tender in some colonies for a while, and even demanded the Natives to pay them taxes in shells<sup>39</sup>. Later, the large decline in the number of Native Americans and the demise of their culture made the shells inconvertible and their monetary use indeed ceased.

#### **4.2. North America (West Coast)**

Einzig, p. 172, says that dentalia, tooth-shaped seashells, were used as money even though they “were never used as an ornament, and had no non-monetary utility.” He simply misunderstands his main source (Kroeber [1953]). Kroeber indeed says that the Yuroks and the Hupas distinguished between dentalia strings that had small or broken shells, and dentalia strings that had big complete shells. Only the former were used as necklaces, while only the latter were used as money<sup>40</sup>. However, the monetary dentalia were not used as jewelry not because they were intrinsically useless; on the contrary, they were much too valuable to be used as jewelry on a regular basis: a string of the largest dentalia could buy a wife to a famous man; two such strings made a man famous, and no commodity or wife was worth two such strings<sup>41</sup>. This is exactly analogous to expensive modern jewelry that stays most of the time in a safe. Besides, if the small and broken dentalia were considered esthetically valuable, it is inconceivable that the large ones were not. The latter were at the very least a raw material, as they could always be broken and then used as jewelry.

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<sup>38</sup> Ingersoll (1883), p. 471. Galbraith (1975, p. 48) also refers to this practice as convertibility.

<sup>39</sup> Ingersoll, p. 472; Einzig, p. 173; respectively.

<sup>40</sup> Kroeber, pp. 23-24; see also Ingersoll, p. 477.

<sup>41</sup> Kroeber, p. 24.

The mere fact that the shells were strung is obvious evidence that they were used as jewelry at one point. Indeed, strings may be easier to handle than single shells, but it is not clear that this advantage is worth the effort of piercing them and obtaining chords in a stone-age society. There is evidence that at first complete shells were jewelry<sup>42</sup>, then the other values and uses described below were created, and only later—probably when supply was too low—the use of the large shells as jewelry ceased<sup>43 44</sup>.

Among the Karoks (neighbors of the Yuroks and Hupas), dentalia were legal tender in the payment of blood-money and the only acceptable payment for a wife<sup>45</sup>. They also had a religious value, as in mythology there was a character named Great Dentalium, which was sometimes considered semi-divine and even as The Creator<sup>46</sup>. Ingersoll, p. 479, reports an unusual type of voluntary convertibility: in the 1880s young modern western

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<sup>42</sup> Nelson (1943), p. 167, specifically reports on archeological findings of “beads of whole and fragmentary dentalium shells.” Three other authors report on the esthetic value of dentalia, without mentioning whether they were whole or broken, so by default they were probably whole: Laughlin (1943), pp. 224-225, says that strings with dentalia beads were found around necks, ankles, and wrists of skeletons; Smith (1906), p. 293, says that a prehistoric carving shows them as hair ornaments; Barbeau (1945), p. 427, says that in mythology they decorated robes.

<sup>43</sup> The Yukis, farther away from the supply of shells, used as money even the small and broken shells, while to the Maidus they were too rare and valuable to be money at all. See Kroeber, pp. 176, 421, respectively.

<sup>44</sup> Einzig mentions other West Coast shells, *olivella* and *haliotis*, without commenting on their ornamental use. Stearns (1877), pp. 848-849, says that both shells, and another shell called *pachydesma*, were both money and jewelry. Ingersoll, p. 478, mentions that the *haliotis* was used in necklaces.

<sup>45</sup> Otherwise the marriage was void and/or the wife was a degraded outcast. See Tylor (1881), p. 445; Einzig, p. 166.

<sup>46</sup> Kroeber, pp. 25, 74.

Native Americans still invested in seashells, knowing that they could always sell them to their elders, which still valued the shells for esthetic and religious reasons<sup>47</sup>. The latter refers to their burial in graves and use in funeral pyres. By default, Ingersoll probably refers to dentalia, because these were the most common shells on the West Coast.

### **4.3. North America (Mississippi Valley)**

Einzig cites Ingersoll: “Many small fresh-water shells, suitable for stringing and unsuited for ornamental purposes, have been found in mounds and graves in the Mississippi valley, and many archeologists believe that these were employed as the currency of the tribes of that region; it is very probable but there seems to be little or no positive evidence (of record), that such was the case<sup>48</sup>.” Ingersoll’s caution about this speculation is in place. Their existence in graves, just like the shells on both Coasts, implies that they had a religious use. The line “suitable for stringing and unsuited for ornamental purposes” seems incoherent. If a string of such shells can be made, and these are small shells, what could possibly make it unsuited to use as a necklace? Even sharp objects like the dentalia shells and teeth (see below) were used in necklaces.

### **4.4. The Kula Ring**

In one of the classic books of economic anthropology, Malinowski (1922) describes a system of international trade in the islands just east of mainland New Guinea. This system, called the Kula Ring, looks superficially like a modern monetary model, as cautiously noted by Townsend (1988). Many villages on many islands are arranged along a circuit. Each one trades only with its neighbors on each side in fixed intervals of time.

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<sup>47</sup> Note that this is similar to an overlapping generations model of “fiat money,” but in reverse!

<sup>48</sup> Einzig, p. 170; Ingersoll, p. 468.

Every trade meeting involves the transfer of at least one of two types of seashell ornaments, called the Kula shells: necklaces and armlets. The necklaces always travel in the circuit clockwise from one village to another, while the armlets travel counter-clockwise. The problem is that 90% of the armlets “are of too small a size to be worn even by young boys and girls<sup>49</sup>.” I first clarify the role of the shells inside this trade system, and then discuss their other roles in the societies that used them.

#### **4.4.1. Inside the Kula Ring**

The shells do *not* actually function as money in the Kula Ring. Their exchange is always strictly separate in time from the trade of other goods by a few minutes or even a year. There is never a quid pro quo trade of a shell for another commodity in this trade system<sup>50</sup>, even though people exchange shells only with their permanent trading partners. The exchange of shells is parallel to the real trade, and essentially it is nothing more than a sporting event, with the Kula shells being the trophies. From the point of view of a modern person, this event is a unique combination of a chess contest, the soccer World Cup, and the Olympic Games. It is like a chess contest in that the game is not about physical abilities, but about mental abilities, specifically—skills in magic. The natives try to get their trading partners to give them the best shells, and they attribute their entire success in this endeavor to their success in magic that they perform and which is supposed to make their trading partner generous<sup>51</sup>. It is like the soccer World Cup in that the trophy does not remain forever with the winner but passes on after a while. It is like the Olympic Games as it brings together various nations in a show of peace and

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<sup>49</sup> Malinowski, p. 88; Einzig, p. 69.

<sup>50</sup> Malinowski, pp. 210-211, 470-471.

cooperation, which facilitates the real trade<sup>52</sup>. As trophies the shells have a strong showing-off value: people compete with their fellow villagers in the form of public displays of the shells they got. The losers suffer great shame, while winners become famous<sup>53</sup>.

Moreover, participation in the Kula Ring is mandatory<sup>54</sup>. This is probably because the chief's status and fame depend on the success of these expeditions that he leads to other islands. All the associated customs are also mandatory: "It is a ceremonial barter based on permanent partnership, where a gift offered is always accepted, and after a time has to be re-paid by an equivalent counter-gift<sup>55</sup>." Violators of the customs can face the death penalty or the wrath of the spirits<sup>56</sup>. Rejection of shells that are unfit as jewelry is therefore *not an option*. In fact, the protocol gives such inferior shells a special role as intermediary gifts: If A gives B a fine pair of armlets and B has no fine necklace to give in return in their next meeting, then B should at least give an inferior necklace as an intermediary gift. B still has the obligation to give a fine necklace when he gets one, and his intermediary gift must be "repaid by a small equivalent pair" of armlets later<sup>57</sup>.

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<sup>51</sup> Malinowski, pp. 392, 421, 217, 281, 335-336.

<sup>52</sup> Malinowski, p. 274.

<sup>53</sup> Malinowski, pp. 375, 94.

<sup>54</sup> Malinowski, p. 209.

<sup>55</sup> Malinowski, p. 187.

<sup>56</sup> Malinowski, pp. 325, 423, 455-459.

<sup>57</sup> Malinowski, p. 356.

#### 4.4.2. Outside the Kula Ring

The shells *do* function as money in non-Kula, normal, intra-island trade, and their acceptance as such is also not discretionary. One must give food to whoever offers him one of the shells<sup>58</sup>. The shells are also legal tender in the payment of the many debts which are a fundamental and an inherent feature of that society<sup>59</sup>. The shells also have a religious use since they qualify as offerings to supernatural forces—the keeper of the netherworld and the spirits who spread epidemic diseases<sup>60</sup>. The armlets that were too small to wear may have had esthetic value after all: being made of a particular conus shell, they may have qualified as raw material for other “ornaments made of fragments of conus shell” that were used there<sup>61</sup>. Finally, the armlets were very valuable outside the

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<sup>58</sup> Malinowski (1921), pp. 9-10, 13-14.

<sup>59</sup> Malinowski, p. 505. Debts are inherent in raising a family. The concept of biological fatherhood is unknown to the natives. A man is not considered the father of his children because in their belief he had nothing to do with their birth (pregnancy is attributed to the spirits). Seriously. He is merely the husband of the mother. Therefore the legal patrons of the children are the mother’s brothers—the men who supposedly have the closest blood relation to the children. They give the children all the food they need, and in return the father gives Kula shells to these brothers-in-law (Malinowski, pp. 174, 505).

<sup>60</sup> Put on top of a dying person’s chest, they serve as a gift to the keeper of the netherworld, in order to induce the latter to show the spirit where to go (Malinowski, pp. 512-513; Malinowski [1916], p. 359). The spirits who spread epidemic diseases disguise as reptiles and are recognized by their lack of fear of humans. The only way to stay alive when meeting such a reptile is to treat it like a chief, which includes putting armlets before it as an offering. This is not really a bribe but an act that should make the creature benevolent (Malinowski, pp. 76-77, 512). Since these supernatural forces are not supposed to physically use the armlets as ornaments, presumably their size does not matter.

<sup>61</sup> Malinowski, pp. 502, 481.

geographical area of the Kula Ring—in mainland New Guinea—for a reason unknown to Malinowski<sup>62</sup>. This means voluntary convertibility.

#### **4.5. Vanuatu (Banks Islands)**

Einzig, p. 53: “These shells are rough and unfinished. They do not serve as ornaments. . . . Originally the shell discs may possibly have been ornaments, but if so they have long ceased to serve that purpose; they have come to serve no other purpose than that of currency. The shell discs are not even polished.” However, there was an esthetic value to the shells after all: smaller and thinner discs made from the same seashell were used in necklaces, and therefore every disk of shell money was a potential raw material for jewelry<sup>63</sup>. There is also evidence that while shell money strings were not used as necklaces, they were worn on ornamental waist belts<sup>64</sup>.

Regardless of any esthetic value, the money’s “main function [is] to buy admissions and promotion in secret societies . . . [that have] immense importance . . . in the economic, political and social systems of primitive communities<sup>65</sup>.” One anthropologist adds: “Any male of consequence found it imperative to belong to numerous societies—both to advance in the public graded society, and hence aspire to influence and leadership, and as a necessary means of property protection<sup>66</sup>.” Only shell money can be

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<sup>62</sup> Malinowski, p. 506. Perhaps the very small armlets were strung and used as beads in jewelry. Stringing of armlets was common at least for ease of transportation (Malinowski, Plate LX).

<sup>63</sup> Codrington (1891), pp. 325-327.

<sup>64</sup> Huffman (1996), p. 190.

<sup>65</sup> Einzig, pp. 53-54.

<sup>66</sup> Allen (1981), p. 19. A similar system for women allows only those who pay shell money to wear some types of clothes, ornaments, make-up, and to be tattooed (Codrington, p. 110).

used for this purpose<sup>67</sup>. Shell money is also used to buy wives<sup>68</sup>. It is very likely that the shells were originally jewelry<sup>69</sup>, and based on that, the restrictions on buying status and wives started. These restrictions were strong enough to maintain circulation even when the shells were no longer used as jewelry<sup>70</sup>.

Finally, this money had an unusual religious status. Spirits are believed to be a supply source of some of the new unstrung money. Some spirits have the word “money” in their names, and as they supposedly like this money, it is the only form of offering that they accept<sup>71</sup>.

#### **4.6. Papua New Guinea (Rossel Island)**

This shell money is not used as jewelry there, and any other form of its public display is discouraged<sup>72</sup>. Originally it was probably used as jewelry: like many other shell moneys it was polished, pierced, and strung, and higher value was given to those shells that were “more pleasing to the eye<sup>73</sup>.” Every piece of this money that reached the neighboring island of Sudest did function there as jewelry<sup>74</sup>, which means voluntary convertibility. Back on Rossel, important goods, services, and wives, must be paid for with this money,

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<sup>67</sup> Codrington, p. 327. Rivers (1914), vol. II, p. 387, adds that the shell money is “intimately bound up with every detail of the procedure of these organizations.”

<sup>68</sup> Speiser (1923), p. 245.

<sup>69</sup> Rivers (1914), vol. II, p. 389.

<sup>70</sup> Codrington (p. 327) says that because of the secret societies “money was kept in continual circulation.”

<sup>71</sup> Codrington, pp. 152-153; Ivens (1931), p. 163; Codrington, pp. 140-142; respectively. These offerings supposedly heal the sick and assure that a new canoe will not sink.

<sup>72</sup> Armstrong (1924a), p. 429. Einzig discusses this money (pp. 61-64), but does not mention this problem.

<sup>73</sup> Armstrong (1924a), pp. 423-424.

<sup>74</sup> Armstrong (1924b), p. 162.

and it is also blood-money<sup>75</sup>. There are strict customary payments of this money during festivities<sup>76</sup>. Finally, the natives believe that the money was made by their supreme god in the remote past. Among the 38 different types of shell money, 32 types are not produced any more. Their supply is fixed, and the ancient production places are considered sacred. This is evidence that the natives take the myth very seriously<sup>77</sup>.

#### **4.7. Micronesia (Kusaie)**

Einzig, p. 45: “Among shell rings in use those of large size were also ornaments. The smaller ones were used for monetary purposes only; they served for paying wages and for contributions to festivities.” In Oceania in general, and in Micronesia in particular, an object’s use as payment in festivities was mandatory according to custom<sup>78</sup>, regardless of any esthetic value<sup>79</sup>. It is very likely that such was also the case in Kusaie<sup>80</sup>. There is only one source that mentions this money.

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<sup>75</sup> Armstrong (1924a), pp. 427-428.

<sup>76</sup> Einzig, p. 63.

<sup>77</sup> Armstrong (1924a), p. 424.

<sup>78</sup> Examples include stones in Yap, shells in the Kula Ring and in Rossel Island, and feathers in the Solomon Islands (see below).

<sup>79</sup> The large rings mentioned were armlets, while the smaller ones were too small for that (Sarfert [1919], p. 217). Presumably they could still be used as beads, and probably were used as such in the past.

## 5. Skins, etc.

Skin and its products are generally useful as clothing materials, but in many cases they may have been too small for that<sup>81</sup>. In most of the cases discussed below it turns out that skins were simply non-metallic coins.

### 5.1. Ancient Times

In Rome stamped leather (of an unknown size) was used, and it was associated with a particular king<sup>82</sup>. Therefore it almost certainly had some legal status. The Carthaginians took some object, which was unknown to the classical authors who told us about it, wrapped it in leather, sealed it, and used it as money<sup>83</sup>. This also looks like a work of a government, which then implies some legal status. Some historians believe it was an emergency currency<sup>84</sup>, which implies that maybe there was a promise of convertibility. If the money's users did not know what was wrapped, then it was almost surely forced on them by the government. If they did know, they may have accepted it because it was practically useful or esthetically valuable, yet not very portable or durable at such a small size without the wrapping (e.g., gold dust)<sup>85</sup>.

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<sup>80</sup> Einzig's only source says in this context that money was not only needed to buy goods, but its possession was absolutely necessary for leading a respectable, socially acceptable, household (Sarfert [1919], p. 217).

<sup>81</sup> It is not easy to determine how small is "too small." Different societies may differ in their technical ability to exploit small pieces, and in their wealth, which affects the necessity of using small pieces.

<sup>82</sup> Einzig, p. 226.

<sup>83</sup> Einzig, pp. 216-217.

<sup>84</sup> Einzig, p. 217.

## 5.2. Medieval Europe

In Italy leather was paid as wages to troops in wartime emergencies<sup>86</sup>. In at least some of these cases the leather was converted later on into silver, and it was just like temporary paper money of later wartime episodes. The convertibility was almost surely promised in advance, and at least expected after the first such wartime episode. In a later episode, in the Netherlands, similar money was issued during a siege. Convertibility expectations aside, the money was boiled and eaten by the starving population<sup>87</sup>. The people may have accepted the money up-front in order to eat it.

Four French kings are mentioned as issuing leather currencies, and this again implies some legal status. They may have been convertible. One of these had a small silver nail attached to it<sup>88</sup>. The money then is probably not the leather, but the silver, with the leather simply intended to prevent the tiny metal from getting lost<sup>89</sup>.

There are five pieces of evidence regarding the use of leather money in Britain<sup>90</sup>. All were issued by governments, and were either “coined” or “stamped,” so they almost surely had some legal status. Each piece of evidence probably refers to a different time

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<sup>85</sup> Gold dust was used as money in many other places in other times (Einzig, p. 553). Maybe it was a tiny piece of metal, which would have been lost otherwise, as in the French leather money discussed below.

<sup>86</sup> Einzig, p. 259.

<sup>87</sup> Einzig, p. 300.

<sup>88</sup> Einzig, p. 259.

<sup>89</sup> It is analogous to keys of rental cars and old hotels, which are usually attached to grossly oversized key rings or other useless objects to make sure that they are not lost.

<sup>90</sup> The evidence refers to Scotland (2nd century B.C.), England (10<sup>th</sup> century, 13<sup>th</sup> century, and sometime before the 17<sup>th</sup> century), and the Isle of Man (16<sup>th</sup> century). See Einzig, pp. 236-237, 250-251, 251, 287, 286-287, respectively.

(and sometime a different particular place), so they are all uncorroborated. The sources of the two earliest claims are of questionable value in Einzig's opinion<sup>91</sup>; the latter two moneys may have been convertible<sup>92</sup>; and the last money was probably big enough to be practically useful<sup>93</sup>.

In Eastern Europe, skins were used on a much more regular basis. In Medieval Russia, whole skins were first used, but because of low supply they were at first replaced by snouts, ears and claws of squirrels, then by small pieces of skin or leather, and finally with officially stamped pieces. Squirrel skins in general, and their subdivisions in particular, were receivable for payments to the Russian government, probably even before they were stamped. Important evidence comes from a change in regime when the Mongol invaders did not recognize the small bits of fur as money, and an economic crisis resulted. It was not the mere change of regime that caused the crisis, but the policy of the new regime. This implies that the previous Russian government *did* recognize the value of that money, at least for some purposes. At least the latter stamped pieces are claimed to have been convertible into whole skins, and contemporary paintings that show skin parts being exchanged for coins presumably describe the official transition to coins<sup>94</sup>. In

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<sup>91</sup> One refers to a mythical king, and the other is an old poem (Einzig, pp., 236-237, 250).

<sup>92</sup> Einzig, p. 251, gives a historian's unexplained opinion regarding one case. As for the other, it was a wartime measure, and hence was probably expected to be converted later on.

<sup>93</sup> Einzig, p. 287.

<sup>94</sup> See Einzig, pp. 269-270, for all the information in this paragraph.

neighboring Poland, small skins were money<sup>95</sup>. With no information on any legal status there, we can resort to voluntary convertibility as an explanation: the neighboring Russians were surely willing to accept these skins as money from Poles because of the many reasons mentioned above. In Siberia small furs were still money in the beginning of the 20<sup>th</sup> century, and they were used for taxes and bride money<sup>96</sup>.

### 5.3. Other

Einzig, p. 248, writes that others have cited the use of small skins as money in China, while in fact they were not money. These were only badges that vassals had to buy at an enormous price, and then wear, if they wanted access to the Emperor.

Scalps and feathers were money among Native Americans, but this is not surprising, as they were regularly used in ornaments<sup>97</sup>.

Feathers were used in the Island of Santa Cruz in the Solomon Islands. The money was very large coils, covered with overlapping rows of feathers. This money was legal tender for ransoms and fines. It was used as bride money, and its value was partly religious—due to emblems and charms attached to the coil<sup>98</sup>. At communal dances, it was customary for visitors to deposit this money with their hosts<sup>99</sup>. The feathers also had a clear esthetic value. Although too large to be worn, the coils originated as smaller

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<sup>95</sup> Einzig, p. 271, writes that the money was “squirrel skins, limbs and heads.” However, his source, Mattheus of Miechovia, quoted in Chaudoir (1836, p. 10), actually writes (in Latin): “pelliculis capitum et extremitatum.” This means “skins *of* heads and limbs (my italics),” not the heads and limbs themselves.

<sup>96</sup> Einzig, p. 106.

<sup>97</sup> Einzig, pp. 173-174.

<sup>98</sup> Einzig, p. 52. Beasley (1936), p. 381, says that sacred stones are also attached to the coils.

<sup>99</sup> Beasley, p. 380.

ornamental belts. The same feathers used on them were also used in jewelry and for decorating dance sticks<sup>100</sup>. The money also had a religious use: it was offered to ghosts, placed in graves, and ceremoniously torn up and scattered at funerals<sup>101</sup>.

## 6. Cloths

### 6.1. Nigeria

Einzig cites Barth (1965) regarding a type of shirt called *dora* that was used as money in Nigeria: it is “the coarsest and smallest one, quite unfit for use.” Barth also writes elsewhere that it is “scarcely to be used for dress<sup>102</sup>.” These negative—yet not definite—descriptions should be understood within the context of Barth’s writing style<sup>103</sup>. Described as “meticulously accurate” like no other 19<sup>th</sup> century explorer, and “unbending pedant<sup>104</sup>,” he does not use understatement in his writings when he has definite things to say. He often uses definite words such as “never,” “total,” “entirely,” “utterly,” and “extremely.” He does not use such definite terms regarding the shirts. Moreover, he uses a very similar language to his shirts’ descriptions at least twice in another context: he describes one horse as “quite lame, and seemed scarcely able to carry,” and another horse as “quite unfit for himself, and scarcely capable of carrying.”<sup>105</sup> Both horses eventually

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<sup>100</sup> Beasley, pp. 380, 391.

<sup>101</sup> O’Ferrall (1904), p. 224; Beasley, pp. 380, 391.

<sup>102</sup> Einzig, p. 143; Barth (1965), vol. II, pp. 55, 155; respectively.

<sup>103</sup> In a random sample of 50 pages from his 2166-pages book he uses the word “scarcely” 11 times.

<sup>104</sup> Kirk-Greene (1965), p. xiv; Kirk-Greene (1962), p. 2; respectively.

<sup>105</sup> Vol. II, pp. 75, 86, respectively.

did carry him, even if barely so. It seems clear then that he means that the shirts were not used often, not that they were completely unused and unusable<sup>106</sup>.

As for his description of the shirts' quality, it should be noted that Barth was not an open-minded anthropologist. Like many other 19<sup>th</sup> century explorers, he was extremely ethnocentric, and inferred his views on the quality of the shirts from his high European standards<sup>107</sup>. His ethnocentricity is apparent in that he describes the Nigerians' women as "ugly," their milk as "nasty," their rice as "the refuse of the elephants, and of a very inferior quality," and their water as "foul and offensive."<sup>108</sup> Obviously the Nigerians had a different opinion on all of these, as they probably had regarding the shirts. Barth's book shows racism regarding other peoples as well, and this is another proof of ethnocentrism<sup>109</sup>. As for the shirts being small, presumably they could still be used by children and babies.

## **6.2. West Africa**

Einzig, p. 136, reports that Caillie, another 19<sup>th</sup> century explorer, used as money little pieces of red cloth 1.5 inch square. Caillie was the first European to go to exotic Timbuktu and live to tell about it. For safety reasons, and unlike Barth, he traveled

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<sup>106</sup> There is no reason to suspect translation issues. Even though Barth was German, he was fluent in English from childhood, published his book in English, and in general had outstanding linguistic talents (Kirk-Greene [1965], p. 2).

<sup>107</sup> See Stocking (1987), especially chapter 3, for a critique by a historian of anthropology on the anthropological reports of 19<sup>th</sup> century travelers, missionaries, and diplomats.

<sup>108</sup> Vol. II, pp. 59, 54, 56, 95, respectively.

<sup>109</sup> He says that one of the tribes of Arab descent was so inhospitable that he started thinking that the tribe was actually of Jewish descent rather than Arab descent (vol. II, p. 99).

without any Europeans, disguised as a Muslim, and thus his evidence is uncorroborated. The bigger problem is that according to his report, he used this cloth as money only “occasionally<sup>110</sup>,” and he does not report on anyone else ever using it as money. Therefore this is not evidence of a *general* medium of exchange, but only anecdotal evidence. It is possible that on the receiving side there was also only one person, as he used to travel with the same groups of locals for long distances.

Also, note that the cloth’s color was red, which is one of the most symbolic, meaningful, and important colors for all human societies<sup>111</sup>. In particular, in the area that Caillie was in, it is a symbol of manhood, heat, blood, activity, “progress,” power, ego, agitation, aggression, and war<sup>112</sup>. Accordingly it had an important showing-off value, regardless of its size. Perhaps it even had a religious value: in Dahomei the most important crown is decorated with sacred red beads and red parrot feathers<sup>113</sup>; in Western Sudan<sup>114</sup> cloth is luxurious only if its color is one in a short list of colors that includes red; it is so important there that once one obtains red cloth it often remains in the household<sup>115</sup>. Red cloth was imported to West Africa from Venice and Egypt, including

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<sup>110</sup> Welch (1938), p. 155.

<sup>111</sup> Hope and Walch (1990), p. 280.

<sup>112</sup> Grosz-Ngate (1988), p. 506, Jansen (1988), p. 266, report on Mali, Senegal, Gambia and Western Sudan. These symbolic meanings are universal (Hope and Walch, p. 282).

<sup>113</sup> Blier (1995), p. 413.

<sup>114</sup> Western Sudan is not the west part of the modern state of Sudan, but the area between this state and the Atlantic Ocean.

<sup>115</sup> Roberts (1987), p. 463.

small articles like caps and sashes<sup>116</sup>. Somewhat further away, Barth saw “a piece of red cloth” on the headdress of a chief<sup>117</sup>.

### **6.3. Congo**

Einzig cites Johnston (1908) regarding money that was “squares of grass cloth [which] could be sewn together into garments or mats. . . . some of the smallest and oldest of the grass mats . . . became in time a useless bundle of tangled hay<sup>118</sup>.” This evidence should be taken with the most caution, because its source is missionaries<sup>119</sup>. One problem with missionaries is that they are neither anthropologists nor economists. Their reports on the societies they visit are not nearly as thorough and exhaustive as could be expected from professionals. Johnston does not report any of the things that anthropologists, and even most travelers, report when they encounter money: concrete examples of payments made with that money, prices, exchange rates with other currencies, etc. With no other evidence for this claim, it is very risky to rely on missionaries’ understanding of what money is and take their evidence that it indeed was money, at face value.

Another important problem is the extreme ethnocentricity of missionaries, which is inherent in their occupation. Perhaps the mats were useful and comfortable to the natives

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<sup>116</sup> Vogt (1975), p. 630; Boahen (1962), p. 357.

<sup>117</sup> Vol. II, p. 68.

<sup>118</sup> Einzig, p. 157; Johnston (1908), p. 790.

<sup>119</sup> Johnston’s book is mostly a collection of reports of 19th century missionaries (p. 671). Wherever he does not give a reference (and this is the case here), then it means by default that this evidence comes from missionaries. The only picture of grass-money that he shows (and it is of a good variety, by the way) is taken from the Baptist Missionary Society ethnographical collection (pp. 792, xviii).

though not to Europeans, especially those Europeans who have no respect whatsoever for native culture, and whose only goal is to change its most sacred tenets (literally).

In Congo, there were other potential uses for mats, even if they were not good enough to sit on. First, grass was the main building material in that area of Congo, for walls, roofs, and indoor partitions, and presumably a bad mat could be used as a patch<sup>120</sup>. Second, dead babies were buried wrapped in small mats<sup>121</sup>, and comfort was clearly not an issue there. Third, important people were buried with a lot of property, including cloth, and that property had to be buried “dead” or “broken” just like the corpse. The destruction of property was a real burden on the community<sup>122</sup>. It can make sense for people to accept a bad mat in exchange, knowing that they could use it in such funerals, instead of destroying their good mats. A religious value of the mats is possible, as dried grasses were some of the many charms that people held in their homes<sup>123</sup>.

#### **6.4. Bohemia**

Einzig, p. 271: “In the 10th century Ibrahim ibn Jakub, the famous traveler, reported that small pieces of linen of very thin texture which could not be used for any practical purposes served as a currency in Bohemia.” In addition to the usual caveats (he was a

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<sup>120</sup> See Johnston, pp. 731, 739, 741, regarding the use of grass as a building material. This possible use reminds of Hardy’s suggestion of using bricks as money (Friedman [1951]).

<sup>121</sup> Johnston, p. 644.

<sup>122</sup> Johnston, pp. 382-383. At least in other societies the official goal was to allow the spirit of the property to join the spirit of the dead, while a more practical goal was to prevent the living from digging up the property and use it (Rink [1888], p. 74).

<sup>123</sup> Johnston, pp. 747-748.

diplomat passing by and his evidence is uncorroborated<sup>124</sup>), there are other problems. Einzig's German source should actually be translated as "thin, very loose, *net-like* woven, little cloths" (my italics). This is important because an association of four European lace museums, The Bobbin Lace European Network (BLEN), claims that ibn Jakub simply saw lace<sup>125</sup>. As fashionable as it was in most of Europe in the Middle Ages, it may have been unknown to the Muslims in Cordoba, which is where ibn Jakub came from. Perhaps he did not recognize that this money is of the same material that decorated local clothes. Alternatively, his statement that the money could not be used for any practical purpose is literally correct: lace cannot protect anyone from cold or heat, but is simply a decoration. Finally, ibn Jakub says that the cloth had a "fixed value"<sup>126</sup>. It could mean that it had a stable market value, but it could also mean that it was fixed by law and forced on sellers.

## 6.5. China

Einzig, p. 248: "Pieces of closely woven silk and hempen cloth were ripped up to be employed as currency even though in doing so they were made unfit for use as clothing and their intrinsic value was destroyed. Before long copper coinage was restored." Einzig's source states it differently: "The cutting of the cloth into parts made it unfit for use as clothing and destroyed its value. And it *became necessary* for the third ruler . . . to issue the following copper cash<sup>127</sup>" (my italics). The restoration of copper was therefore not an unrelated event as Einzig's phrasing might imply. Silk and cloth had been money in China for thousands of years before that. Apparently there was a change in economic

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<sup>124</sup> He was the first author ever to document the mere existence of Prague, where he made that observation.

<sup>125</sup> [http://www.blen.net/blen\\_14/140104.htm](http://www.blen.net/blen_14/140104.htm) (2005), p. 3.

<sup>126</sup> Einzig, p. 271. It is "festen wert" in the German source.

<sup>127</sup> Lacouperie (1892), p. 411.

conditions that required the use of smaller pieces than before. Once the people realized that their money was intrinsically useless they apparently rejected it and the ruler had to amend the situation. Therefore, there is no proof that anyone knowingly accepted this corrupted material in trade after it was already clear that it was useless.

#### **6.6. Samoa**

Mats were claimed to be money even though “many of the most valuable mats are old and torn” (Einzig, p. 29). However, Einzig adds: “Many old mats had distinct names and acquired great sentimental value as a result of having been used as the ‘top mat’ on some great occasion, such as a famous wedding or the conclusion of a peace treaty. . . . such heirlooms cannot be possibly considered as currency.” Mats in general were both legal tender and the most sacred objects in Samoa<sup>128</sup>.

#### **6.7. Vanuatu (New Hebrides)**

Mats are intentionally smoked on the Island of Maevo, and that increases their value even though it probably prevents their practical use. These mats had a similar role to that of shells in the neighboring Banks Islands. They were used only, or mostly, to buy promotions in the secret societies that dominate Vanuatu culture<sup>129</sup>. The money can then be considered as being forced on buyers of an essential social status. Unspoiled mats, whose practical use is unquestionable, were used as money for other payments<sup>130</sup>.

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<sup>128</sup> Einzig, pp. 31, 29; Grant (1995).

<sup>129</sup> Coote (1883), p. 65, says that they are used only for that; Codrington (1891), p. 323, says that they are mostly used for that.

<sup>130</sup> Speiser (1923), p. 246.

## 7. Heads and their Parts

### 7.1. Skulls

Einzig reports allegations that animal skulls were money in the Assam region of India, and human skulls were money in Borneo and New Guinea<sup>131</sup>. In all three cases, Einzig doubts the credibility of these allegations. Public display of skulls inside or outside houses is documented in all three places<sup>132</sup>. Such display has a classic showing-off value. It creates an impression that the person displaying them is brave and strong, and it invokes fear, fame, and respect. Display of animal skulls has also had a questionable esthetic value in many other places, from 19<sup>th</sup> century Africa<sup>133</sup> to bars and clubs in 21<sup>st</sup> century Texas. In addition, in Borneo, the possession of skulls by a man was necessary for getting married, while in New Guinea, human skulls had a religious use as charms and a practical use as lime pots<sup>134</sup>. The case of New Guinea is remarkable in that white traders are claimed to have accepted such money. For them there could have been a showing-off value just like for the natives, while the other uses were relevant for them in the context of voluntary convertibility of the skulls by other natives into goods that the

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<sup>131</sup> Einzig, pp. 105, 188, 79-80, respectively.

<sup>132</sup> See Godden (1897), p. 180, regarding Assam, India; Pryer (1887), p. 233, regarding Borneo; Malinowski (1922), p. 41, regarding the Trobriand Islands, which are just off mainland New Guinea (Einzig does not specify which part of New Guinea supposedly used skulls as money, nor does he give any reference).

<sup>133</sup> Johnston (1890), p. 724.

<sup>134</sup> Craufurd (1853), p. 77; Seligmann (1905); Malinowski (1916), p. 371; respectively.

traders did value. A surprising type of white clients who might have wanted human skulls for their own sake is Western museums, as is known to have happened in India<sup>135</sup>.

## **7.2. Boars' Tusks and Jawbones**

Einzig, p. 55: These were money in the Torres Islands (currently in the State of Vanuatu in the Western Pacific). Torres Islanders belong to a culture where raising, and eventually sacrificing, boars with perfect tusks is an extremely important social necessity. Therefore, jawbones are hung in front of houses of secret societies for showing-off purposes<sup>136</sup>. Not much is known about Torres Islands, being much neglected by anthropologists compared to the nearby islands (Banks and New Hebrides). In those neighboring islands both jawbones and tusks are incorporated into statues and masks, and are used in the important dances of initiation into high ranks of the secret societies. Tusks are also used in jewelry in the neighboring islands<sup>137</sup>. This establishes at least voluntary convertibility of both objects. Tusks were also money in New Guinea, where they were used in jewelry<sup>138</sup>.

## **7.3. Smaller Teeth**

Teeth were a common currency in the Western Pacific. The teeth were of sperm whales (in Fiji and Gilbert Islands), dogs (in New Guinea, Admiralty Islands, and Solomon Islands), and porpoises and flying foxes (in the Solomon Islands). Also, in Congo, teeth of leopards, wild pigs, and humans were money<sup>139</sup>. All were used in jewelry<sup>140</sup>, and some also had legal and/or religious status<sup>141</sup>.

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<sup>135</sup> Prakash (1992), pp. 157-8.

<sup>136</sup> Codrington (1891), pp. 101, 105.

<sup>137</sup> Speiser (1923), pp. 349, 353, 383; Rivers (1914), vol. I, pp. 74-76, vol. II, p. 460; Coote (1883), p. 76.

<sup>138</sup> Neuhauss (1911), vol. I, p. 178.

<sup>139</sup> Einzig, pp. 32, 45, 79, 64-67, 59, 154, respectively.

## **8. Other Organic Materials**

### **8.1. Broken Rice in Burma**

Einzig, p. 96: “Useless broken rice, unsuitable for food or seed, was used” as money. Einzig’s indirect source is the British ambassador who could surely afford the best possible rice. However, to the less fortunate, broken rice has long been used successfully as a cheap substitute for full rice, in Burma and elsewhere<sup>142</sup>. It is definitely edible, even if its cooking is not as easy as that of regular rice<sup>143</sup>.

### **8.2. Bitter Almonds in India**

Einzig, pp. 273, 301: “Bitter almonds unsuitable for consumption constituted small change.” Raw bitter almonds are indeed not edible. In fact, they are highly poisonous. But their detoxified oil has been used for flavoring in India for many centuries<sup>144</sup>.

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<sup>140</sup> See Gardiner (1898), p. 412, regarding Fiji; Koch (1986), p. 160, regarding Gilbert Islands; Neuhauss (1911), vol. I, p. 178, regarding New Guinea; Mead (1930), illustration opposite p. 112, regarding Admiralty Islands; Woodford (1888), p. 370, regarding Solomon Islands; and Johnston (1908), pp. 790-1, regarding Congo.

<sup>141</sup> Teeth in Fiji were extremely sacred and were used for fines and bride money (Einzig, p. 32). In Admiralty Islands they were used in religious rites and as bride money (Einzig, p. 65). In Solomon Islands they were used for fines and bride money (Einzig, pp. 59-60), and were offered to holy stones and sharks (Fox and Drew [1915], pp. 143, 168).

<sup>142</sup> Users include welfare recipients in modern Burma (Maung [1997], p. 509), ordinary people in Vietnam (Chanda [1984], p. 29) and China (Shaffer [1978], p. 390), slaves in America (Martin [1946], p. 262), and dogs in the North Pole (Rokeby-Thomas [1939], p. 425).

<sup>143</sup> Rokeby-Thomas (1939), p. 425.

<sup>144</sup> See [www.dictionary.com](http://www.dictionary.com) (2005) under “bitter almond” and [http://www-ang.kfunigraz.ac.at/~katzer/engl/generic\\_frame.html?Prun\\_dul.html](http://www-ang.kfunigraz.ac.at/~katzer/engl/generic_frame.html?Prun_dul.html) (2005).

### **8.3. Poisonous Seeds in Burma**

Einzig, p. 96: “Shiny red and black seeds of a creeper, *Abrus precatorius*” were money. The seeds are not edible. In fact, they are extremely poisonous. However, they are remarkably uniform in size and weight (.1 gram), so they were used in East Asia, including Burma, in scales when weighing precious metals and other objects<sup>145</sup>.

### **8.4. Bad Cattle in Kenya**

The Masai’s only form of wealth is cattle, including the “old and diseased.” One native said that just as a wrinkled old pound note is as good as a new note, the same goes for cows. However, there are “profound religious and social foundations of the cattle currency in Africa,” and at least neighboring tribes are known to have used it for bride money, fines, and sacrifices<sup>146</sup>.

### **8.5. Rubber Balls in the Guinea Bay**

Rubber balls are said to have been money in the late 19th century (Einzig, p. 149). Given the time period, these were probably not sports balls. However, they had another use, in playing the marimba, the African xylophone, which is one of the most popular African instruments. It is played with sticks that are tipped with rubber balls. The earliest evidence of the marimba’s existence, and its greatest players, are from the Guinea Bay<sup>147</sup>.

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<sup>145</sup> Jeffreys (1971), pp. 302-303; Armstrong (2000); [www.sizes.com/units/ruay.htm](http://www.sizes.com/units/ruay.htm) (2005).

<sup>146</sup> Einzig, pp. 116-118, is the reference for everything in this paragraph.

<sup>147</sup> [www.africacenter.org.uk/akwaba\\_balafon\\_2.htm](http://www.africacenter.org.uk/akwaba_balafon_2.htm) (2005); Chatelain (1897), p. 30; Sinclair (1908), p. 210. See [www.chapala.com/chapala/Janmarimba2001.htm](http://www.chapala.com/chapala/Janmarimba2001.htm) (2005) and [www.americandrum.com](http://www.americandrum.com) (2005) for current use and sale of marimbas with their rubber-tipped sticks.

The first marimba is said to have been given by the spirits to a 13<sup>th</sup> century Guinean king and sorcerer, so there may have been a religious value too<sup>148</sup>.

## **9. Minerals**

### **9.1. Ruined Metal in Sparta**

In general, any piece of metal, regardless of its shape, is valuable because it can be melted and reshaped. Plutarch claims for an exception in Sparta, where “iron bars had been made deliberately useless for any practical non-monetary purpose by dipping them into vinegar while in a red-hot state, which process is supposed to make iron too brittle for industrial use” (Einzig, p. 223). According to Plutarch, who lived centuries later, this was meant to prevent people from melting the currency and using the metal for practical purposes. It is not clear if the money really existed, since the contemporary historian Thucydides did not mention it, and undisputed archeological findings of it do not exist<sup>149</sup>. Even if it did exist, in this most extreme totalitarian regime sellers and/or buyers were forced to use it: according to Plutarch, the enacting king “set out certain coins of iron which he commanded only to be current,” or—according to another translation—“he enjoined the usage of iron money alone”<sup>150</sup>. Finally, a reversal of the destructive chemical process was possible even in such ancient times and only required a skilled blacksmith<sup>151</sup>.

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<sup>148</sup> [www.africacenter.org.uk](http://www.africacenter.org.uk) (2005)

<sup>149</sup> Flower (2002), p. 193.

<sup>150</sup> Plutarch (1963), p. 8, and Figueira (2002), p. 137, respectively. The holding of precious metals (potential competing monies) was punishable by death (Einzig, p. 223).

<sup>151</sup> Figueira (2002), pp. 148-149.

## **9.2. Bad Stone Axes in Papua New Guinea**

Einzig mentions “abnormally large sized axe blades which could not possibly be used for practical purposes” and “finely polished ceremonial axe blades . . . too large and thin to be used as tools” (p. 79). Both were made of stone. Malinowski explains that such stone axes in Papua New Guinea were once useful and hence their use in ceremonies established itself. When metal made them redundant for practical purposes, there was no reason to make them practically useful. In particular, he discusses the garden magic that must be performed with such an axe, or else the spirits will be angry<sup>152</sup>. As for the blades that are too large, but not too thin, they could be valuable as raw materials, since smaller, useful, blades could be made of them.

## **9.3. Stone Arrowheads in Russia and Japan**

Einzig speculates that some prehistoric stone arrowheads were money, based on one or more of the following properties: they were too small; they were made of “agate and other superior stone” or were made of flint but beautifully polished; they were found in large numbers in one place, akin to a modern safe full of money<sup>153</sup>. In addition to this being purely uncorroborated speculation, there are many conceivable alternative explanations. As for size, we cannot know for sure that an arrowhead that looks too small to us was indeed useless for shooting. An example comes from Africa, where the Bushmen tip their wooden arrows with a small piece of iron or a flake of stone (including agate), which they smear with poison. That is enough to kill<sup>154</sup>. Alternatively, even if an

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<sup>152</sup> Malinowski, p. 423 and Plate LIX.

<sup>153</sup> Pp. 268-269, 277, 189.

<sup>154</sup> Leith and Jones (1899), p. 259.

object is too small for practical purposes, it can still be useful, for example, as a toy. Toy arrows are specifically mentioned in Japan and other parts of the world<sup>155</sup>.

As for the arrowheads' esthetic appearance: first, perhaps they were used in ornaments or decorations. Second, this appearance may have been incidental to a design that was meant to be effective. Third, unlike bullets, arrowheads maintain their shape after being shot and can be recovered later. Investing in esthetical arrowheads is therefore not unreasonable. Finally, what looks precious or beautiful to us may not have been viewed as such by the ancients; there are remarkable examples from other places regarding differences in tastes across cultures<sup>156</sup>. As for the abundance of many items in one place, it was not necessarily a safe. It could have been a weapons depot of arrowheads, or even a weapons depot of complete arrows, with the wooden parts of the arrows completely decaying over time.

#### **9.4. Dust in Kenya**

Einzig, p. 118: "Red brick dust" was supposedly money near the Tana River. Einzig notes that the evidence is uncorroborated. Others who visited the area describe "red ochre," "red oxide," and "raddle," that was mixed with oil and smeared all over the body. It has an esthetic value: "it imparts a rich crimson tinge to the skin, suggestive of bronze statues seen in the afterglow of a Swiss or Italian sunset." In funerals the same material is

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<sup>155</sup> Gatschet (1899, p. 157) [Native Americans], Saville (1912, p. 435) [Papua], and Rahder (1953, p. 231) [Japan].

<sup>156</sup> E.g., Malinowski, p. 351: the natives in the Western Pacific cherished the shells of seashells more than anything else. They ignored gold lumps, and they let their children play with pearls they happened to find while eating seashells. They treated the pearls like bones in a chicken. They were surprised to meet white traders who completely ignored the shells of the seashells, but did all they could to get gold and pearls.

used to make marks on parts of the corpse<sup>157</sup>. This material is almost surely the same “red brick dust” claimed to be money<sup>158</sup>. In addition, the dust has a practical use when covering the skin, for protection from cold, heat, and insects<sup>159</sup>.

### **9.5. Glass Lozenges in the Guinea Bay**

Einzig, p. 149: Natives used “glass lozenges” as money. These are simply a type of beads, sometimes in the shape of lozenges<sup>160</sup>. That glass is considered esthetically valuable is not surprising, as we all know how Native Americans found it fascinating. In fact, glass beads were worth as much as gold in the Guinea Bay area<sup>161</sup>.

### **9.6. Salty Clay in Nigeria**

Einzig, p. 143, reports that salt mixed with clay served as money. It does not seem possible to separate the two after being mixed, and it does not seem a-priori that salty clay is better for pottery than normal clay. The solution here lies in the notion of geophagy, which is “a practice in rural or pre-industrial societies of eating earthy substances (as clay) to augment a scanty or mineral-deficient diet”<sup>162</sup>. It has been

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<sup>157</sup> Werner (1913), pp. 374, 376; Hobley (1894), p. 105; respectively.

<sup>158</sup> Interchanging of these words happened in similar descriptions of other Kenyan tribes: Harrison (1901), p. 274, uses “red brick dust,” while Stumpf (2003) uses “red ochre.” Other authors who describe the same habit all over Kenya use words like “clay,” “soot,” and “red earth.”

<sup>159</sup> Last (1883), p. 518; Collie (1912), p. 332.

<sup>160</sup> Glass “lozenge” beads are sold online. See, e.g., [www.galleryicondesign.com/jewelry.html](http://www.galleryicondesign.com/jewelry.html) (2005).

<sup>161</sup> E.g., [www.authenticafrika.com/nigblacstrip.html](http://www.authenticafrika.com/nigblacstrip.html) (2005).

<sup>162</sup> <http://www.m-w.com/dictionary/geophagy> (2005).

observed in many parts of the world, including Nigeria<sup>163</sup>. Mixing salt with clay, then, is the normal use of salt: it makes the clay tastier!

## **10. Conclusion**

Has “fiat money”—as defined by economists—ever existed? It is impossible to prove that it didn’t. It will surely take more than a lifetime to read every book and article ever published in economics, anthropology, history, geography, archeology, sociology, and other fields. Each one of these can include a claim that some object—intrinsically useless, inconvertible, and lacking any other legal support—functioned as money. Of course, many other societies have disappeared without a trace or have not left enough evidence on their monetary aspects.

The immediate goal of the paper was to critically evaluate dozens of claims collected in Einzig’s monumental project. I believe that enough doubt has been cast on each and every one of those claims of “fiat money.” Absolute proofs are sometimes impossible because of lack of evidence. Often the one who reports on the “fiat money” is at fault for not trying to get more important facts about the money and the society who supposedly used it.

More generally, the paper makes another point: it is not so hard to disprove “fiat money” claims with some digging for facts. Unfortunately, it is even much easier to take some evidence out of context, ignore laws, customs, trade relations, subjective cultural tastes and fashions, and declare: “We found an example of ‘fiat money’!” In this sense the main contribution of the paper is to raise the burden of proof on “fiat money” claims. There are surely more such potential claims out there that might be raised in response to

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<sup>163</sup> Hunter (1973), Vermeer (1966).

this paper. “Fiat money” is defined by the absence of properties: intrinsic value, convertibility, and legal support (the latter can be either human law or divine law). Proving that these properties do not exist is perhaps impossible, but anyone who makes a “fiat money” claim must at least carefully look for them. An easy preliminary source can be the Internet. Much of the data collected here was found by looking for keywords in [www.jstor.org](http://www.jstor.org) (in fields such as geography, history, etc.), or even [google.com](http://google.com).

Many “fiat money” claims come from travelers’ diaries. In their brief visits they usually cannot learn much about the society they report on. Their evidence is anecdotal, and the weirder their claims the more publicity or interest they can invoke back home. Adam Smith already warned us against believing the accounts of “weak and wondering travelers” and “stupid and lying missionaries<sup>164</sup>.” These types of evidence indeed should be taken with a very high degree of caution and skepticism. A hypothetical report of a traveler to the Amazon that “one of the tribes there uses Armadillo’s tails for money!” is absolutely *not* a proof of “fiat money.” Ethnocentrism of missionaries, travelers, and diplomats, is also behind many “fiat money” claims. Finally, lack of anthropological skills by these sources is also a problem. As Malinowski put it: “You can no more expect good all round ethnographical work from an untrained observer than you can expect a good geological statement from a miner, or hydrodynamic theory from a diver. It is not enough to have the facts right in front of one, the faculty to deal with them must be there<sup>165</sup>.”

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<sup>164</sup> Smith (1776), Book 5, Chapter 1, Part 3, Article 1.

<sup>165</sup> Malinowski (1916), p. 415, fn. 3.

The presumed non-existence of “fiat money” is not surprising because there is a logical flaw in the very idea that it can ever be used in a realistic environment with many potential “fiat moneys:” if I pick up, say, a useless nutshell and try to use it as “fiat money” to buy goods from you, then your optimal response is to pick up a different nutshell, or a fallen leaf, and try to use it as a different “fiat money” to buy goods from me (Prescott and Rios-Rull [2005]). This reasoning implies that any “fiat money” claim must be a-priori suspicious. Recognizing that legal status is crucial in reality for intrinsically useless money has important implications. It can explain currency substitution, or its absence, in chaotic periods of war, revolution, and hyperinflation, as well as peaceful currency transitions (e.g., Euro). Such explanations are more informative than the alternative, which is to blame it all on some undetermined “trust” in the state or its money<sup>166</sup>.

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<sup>166</sup> For an extensive discussion, see Goldberg (2007).

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