

GUEST EDITORIAL COMMEMORATING A MILESTONE IN PRIMATE NUMISMATICS

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Cash currency is a deeply symbolic instrument of commerce. It holds value, of course, but the face value of a given coin or banknote far exceeds its intrinsic (commodity) value. Money today is a representation—the value is determined by fiat by an issuing authority, usually a central bank or government. It is also a medium for spreading nationalist imagery, a platform for producing, affirming, and communicating the values that shape national identities. Cash creates as much as it reflects icons of social and cultural importance. This dual function of cash produces a curious ontological tension—the embodiment of different value systems, each symbolic—that can be used in the service of primate conservation. Exemplifying this potential is the Brazilian 20-real banknote issued in 2002 by the Central Bank of Brazil (*Banco Central do Brasil*, BCB). Twenty years later, it is a milestone that invites commemoration and reflection.

The BCB introduced a new currency, the real, in July 1994. The first series of banknotes—in denominations of 1 real, 5, 10, 50, and 100 reais—is notable for its images of Brazilian flora and fauna. Additional denominations of 2 and 20 reais followed in 2001 and 2002, respectively, with the latter featuring a golden lion tamarin (*Leontopithecus rosalia*; Fig. 1). The second series of banknotes followed in 2012 with another beautifully rendered image of *L. rosalia* (Fig. 2). The public visibility of this banknote is difficult to estimate. Cash is used for 47% of all payments in Brazil (Calicchio *et al.*, 2019), and one-third of Brazilians are unbanked (Demirgüç-Kunt *et al.*, 2018), which makes cash currency essential for wage payments and purchases, especially in rural areas. The face value of a banknote is another factor determining its use; in this case, R\$ 20 = US\$ 3.70 at the time of writing (May 2021), a relatively quotidian value that spurs circulation.

The BCB's choice of *L. rosalia* is telling in a country with at least 102 primate species (Estrada *et al.*, 2018), for it speaks to the impact of one grassroots effort. The campaign to save *L. rosalia* from the brink of extinction is well-known to primatologists, but I will attempt a brief summary that draws on the reviews of Dietz *et al.* (1994) and Kierluff *et al.* (2012). Golden lion tamarins are endemic to the lowland Atlantic forests of Rio de Janeiro, Brazil. By the 1960s, the wild population had dwindled to <400 individuals, although some reports put the number as low as 150 (Russo, 2009). The population stabilized with the establishment of Poço das Antas Biological



Figure 1. Reverse image of the Brazilian 20-real banknote issued in 2002, the first prominent representation of a nonhuman primate on a banknote from the western hemisphere.

Reserve in 1974, together with improvements in captive husbandry and management. In 1983, the Golden Lion Tamarin Conservation Project (GLTCP) began long-term fieldwork in concert with community outreach efforts. By 2014, the wild population had surged to ~3700,

but an outbreak of yellow fever in 2016 reduced this number by one-third (Dietz *et al.*, 2019; Ruiz-Miranda *et al.*, 2019). All told, the recovery of *L. rosalia* in the wild and captivity is widely and rightly celebrated as an outstanding success story.

It is also viewed as a model for the ‘flagship species’ approach to conservation. The GLTCP focused its public awareness campaign on a single charismatic species, using it as a strategic rallying point, or symbol, for its broader effort to conserve biodiversity in the region. Dietz *et al.* (1994) argued that it is more practical to focus public attention on a single visible species “than the fuzzy concept of species richness, or fuzzier concept of genetic diversity” (p. 33). Others put it more bluntly: “it is easier to generate interest and pride in a spectacular national animal, like a lion tamarin, than in attempting to communicate to the rank and file the complicated ecology of threatened rain forest habitat” (Mallinson, 1991 cited in Dietz *et al.*, 1994).

The effectiveness of the GLTCP’s outreach activities (which included radio, television, and a wide array of printed materials) is attested by a longitudinal survey of residents in Silva Jardim, the municipal home of Poço das Antas Biological Reserve. In 1992, 59% of 518 respondents recognized *L. rosalia*, whereas 79% of 497 respondents recognized it two years later, a significant increase in pre- and post-treatment responses (Dietz *et al.*, 1994). Replicating this same survey now in Silva Jardim and elsewhere could prove instructive. The 20-real banknote has circulated for two decades, suggesting that nearly every Brazilian would recognize *L. rosalia* today. Such findings would speak to the effect of unifying symbols—of biodiversity, of national pride—that is both an outcome and powerful amplification of the flagship species concept.

It is perhaps no coincidence that other monkeys have since appeared on banknotes from Central and South America (Fig. 3). The trend is not above criticism, however, for at least three reasons. First, a flagship species is a strategic choice based on aesthetics. Its virtue lies in its charisma (Lorimer, 2007), or the ability to induce concern and sympathy from the general public, especially wealthy patrons. Consequently, a flagship species may enjoy a privileged status, drawing resources away from ‘keystone’ or ‘umbrella’ species that perform important ecological services (Leader-Williams and Dublin, 2000). Second, flagship status is potentially counterproductive for some species—ubiquitous imagery can give the impression of population abundance, desensitizing the public to cases of imminent extinction (Courchamp *et al.*, 2018). Third, there is, for some, a perverse irony to celebrating biodiversity on currency, the very thing that accelerates human consumerism and despoils nature (Büscher *et al.*, 2012).

Putting primates on postage stamps is another means of raising public awareness (Almquist and Almquist, 1986), and doing so could generate revenue in direct support of primate conservation efforts (Yeung, 2018). Still, there is no substitute for the ubiquity and daily use of cash currency, at least currently, as a valuable platform for public outreach. Primates have long served as icons in the environmental movement (Dominy *et al.*, 2018), and some flagship species can serve the dual purpose of exemplifying keystone and umbrella species, too—*L. rosalia* for one. Moving forward, it would be useful to illustrate primates performing crucial ecosystem services, a subtle reorientation from simply raising awareness to science communication.



Figure 2. Reverse image of the Brazilian 20-real banknote issued in 2012. An effigy of *L. rosalia* is visible as a watermark in the blank area.



Figure 3. Cash currencies from Central and South America featuring nonhuman primates. (A) Reverse image of a Guyana 10-cent coin, issued from 1976–1980, and featuring a squirrel monkey (*Saimiri sciureus*). (B) Reverse image of a Belize 20-dollar banknote, issued from 1997–2017, and featuring a black howling monkey (*Alouatta pigra*). (C) Reverse image of a Peru 1-sol coin, issued in 2019, and featuring a yellow-tailed woolly monkey (*Lagothrix flavicauda*). (D) Reverse image of a Venezuela 100-bolívar banknote, issued in 2018, and featuring a brown spider monkey (*Ateles hybridus*). (E) Reverse image of a Costa Rican 5000-colón banknote featuring a white-faced capuchin (*Cebus capucinus*)—this polymer banknote was issued in 2020, replacing a paper banknote that was first issued in 2009. (F) Reverse image of a silver non-circulating 25-dollar coin, minted for the British Virgin Islands in 1993, and featuring *L. rosalia*. (G) Reverse image of a silver non-circulating 1-sol coin, minted for Peru in 1994, and featuring *L. flavicauda*. (H) Reverse image of a silver non-circulating 5-córdoba coin, minted for Nicaragua in 1994, and featuring a mantled howling monkey (*Alouatta palliata*). (I) Reverse image of a silver non-circulating 10-dollar coin, minted for Belize in 1995, and featuring *A. pigra*. (J) Reverse image of a silver non-circulating 5-real coin, minted in Brazil in 2015, and featuring *L. rosalia*.

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References

- Almquist, A. J. and Almquist, H. J. 1986. Primate postage stamps and primate conservation. *Primate Conserv.* 7: 110–117.
- Büscher, B., Sullivan, S., Neves, K., Igoe, J. and Brockington, D. 2012. Towards a synthesized critique of neoliberal biodiversity conservation. *Capital. Nat. Social.* 23: 4–30.
- Calicchio, N., Dias, Y., Lombardi, J., Mansur, M., Fleury, M., Carneiro, A., Berbel, J., Barbosa, G., Coutinho, A., Dare, C., Craddock, C., Sertorio, C., Boaretto, F., Carvalho, F., Broide, J. and Galache, J. 2019. *Brazil Digital Report, 1st Edition*. McKinsey e Company.
- Courchamp, F., Jaric, I., Albert, C., Meinard, Y., Ripple, W. J. and Chapron, G. 2018. The paradoxical extinction of the most charismatic animals. *PLOS Biol.* 16: e2003997.
- Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S. and Hess, J. 2018. *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution*. The World Bank, Washington, DC.
- Dietz, J. M., Dietz, L. A. and Nagagata, E. Y. 1994. The effective use of flagship species for conservation of biodiversity: the example of lion tamarins in Brazil. In: *Creative Conservation: Interactive Management of Wild and Captive Animals*, P. J. S. Olney, G. M. Mace and A. T. C. Feistner (eds.), pp. 32–49. Chapman e Hall, London.
- Dietz, J. M., Hankerson, S. J., Alexandre, B. R., Henry, M. D., Martins, A. F., Ferraz, L. P. and Ruiz-Miranda,

- C. R. 2019. Yellow fever in Brazil threatens successful recovery of endangered golden lion tamarins. *Sci. Rep.* 9: 12926.
- Dominy, N. J., Winters, S., Pease, D. E. and Higham, J. P. 2018. Dr Seuss and the real Lorax. *Nat. Ecol. Evol.* 2: 1196-1198.
- Estrada, A., Garber, P. A., Mittermeier, R. A., Wich, S., Gouveia, S., Dobrovolski, R., Nekaris, K. A. I., Nijman, V., Rylands, A. B., Maisels, F., Williamson, E. A., Bicca-Marques, J., Fuentes, A., Jerusalinsky, L., Johnson, S., Rodrigues de Melo, F., Oliveira, L., Schwitzer, C., Roos, C., Cheyne, S. M., Martins Kierulff, M. C., Raharivololona, B., Talebi, M., Ratsimbazafy, J., Supriatna, J., Boonratana, R., Wedana, M. and Setiawan, A. 2018. Primates in peril: the significance of Brazil, Madagascar, Indonesia and the Democratic Republic of the Congo for global primate conservation. *PeerJ* 6: e4869
- Kierulff, M. C. M., Ruiz-Miranda, C. R., de Oliveira, P. P., Beck, B. B., Martins, A., Dietz, J. M., Rambaldi, D. M. and Baker, A. J. 2012. The golden lion tamarin *Leontopithecus rosalia*: a conservation success story. *Int. Zoo Yrbk.* 46: 36-45.
- Leader-Williams, N. and Dublin, H. 2000. Charismatic megafauna as 'flagship species'. In: *Priorities for the Conservation of Mammalian Diversity: Has the Panda had its Day?*, Entwistle, A. and Dunstone, N. (eds.), pp. 53-81. Cambridge University Press, Cambridge.
- Lorimer, J. 2007. Nonhuman charisma. *Environ. Plan. D* 25: 911-932.
- Ruiz-Miranda, C. R., de Morais Jr., M. M., Dietz, L. A., Rocha Alexandre, B., Martins, A. F., Ferraz, L. P., Mickelberg J. *et al.* 2019. Estimating population sizes to evaluate progress in conservation of endangered golden lion tamarins (*Leontopithecus rosalia*). *PLOS ONE* 14: e0216664.
- Russo, G. 2009. Biodiversity's bright spot. *Nature* 462: 266-269.
- Yeung, A. C. Y. 2018. Promoting environmental conservation one stamp at a time. *Biodiv. Conserv.* 27: 3843-3844.