



This 1979 Italy 100-lira coin shows severe push doubling and rim-restricted design duplication on both faces.

Images by Mike Diamond.



Close-up images of the letters perched on the design rim.



## Established patterns, assumptions upended

Italian coin shows rim-restricted design duplication on obverse and reverse faces

by **Mike Diamond**, Coin World Senior Editor

The rarest form of machine doubling is rim-restricted design duplication. It occurs when a die recoils from a coin's surface, shifts laterally, and lands lightly on the design rim, leaving behind a set of raised design elements (Collectors' Clearinghouse, Aug. 22, 2011).

Rim-restricted design duplication, or RRDD, is supposed to be restricted to the face struck by the hammer die. This makes intuitive sense, as lateral motion of the anvil die is so tightly constrained by the surrounding collar that contact between the design-bearing portion of the anvil die face and the coin's newly formed design rim should be impossible. This constraint also explains why the most severe examples of push doubling and slide doubling (the other forms of machine doubling) are also generated by the hammer die.

These longstanding assumptions and established patterns were recently upended by images of a special-issue 1979 Italy 100-lira coin sent to me by Andrea Del Pup. RRDD is present on both faces. Arrayed along the obverse design rim between 7:00 and 8:00

are the raised letters REP. Running along the reverse design rim between 10:30 and 12:00 are the outer tips of NUTRIRE 'IL. The coin was struck in normal coin alignment; therefore, the direction of RRDD is slightly different between the two faces. I am unsure which die was the hammer die.

Each face also displays very strong push doubling. An east-to-west obverse die bounce generated strong marginal shelving on the back of girl's head and neck. On the reverse face, a die bounce toward the northwest produced dramatic doubling on the first two digits of "100." The drastically different directions of die movement between the two faces is typical of bifacial push doubling and eliminates a weak second strike as the cause of the doubling (Collectors' Clearinghouse, March 15, 2010).

Del Pup sent me images of a second coin struck by the same die pair (not shown). It shows bifacial push doubling that is nearly identical to the first example in its location, direction, and severity, but lacks RRDD.

The direction of push doubling and

RRDD on the reverse face of our original coin seems to match, suggesting that a single touch-down could have been responsible for both. However, the respective directions of push doubling and RRDD on the obverse face are separated by over 45 degrees, requiring two touch-downs. Multiple, multi-directional die bounces on the same face are known among domestic and foreign coins.

Broader implications arise from this first example of bifacial and anvil die-generated RRDD.

(1) It re-affirms RRDD as a form of machine doubling

(2) The presence of RRDD on the face struck by the anvil die suggests that the coin was no longer confined by the collar during the dies' recoil and that the collar shifted along with the anvil die.

(3) A diagnosis of RRDD is now more likely for a 1987-D Lincoln cent described in the Oct. 21, 2013, column. Its reverse design rim (generated by the anvil die) carried traces of STATES OF AMERICA.

(4) A direct association between RRDD and push doubling is established for only the second time. The other example is a Proof 2007-S Thomas Jefferson Presidential dollar that was described in the Dec. 6, 2010, column. 