

Beyond Idolatry – The Transgression of the Golden Calf Revisited

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ABSTRACT

In the Biblical account of the golden calf (Exodus 32), abnormal importance is devoted to the metal of the statuette, its origin, and even its destruction. The present analysis identifies this latter process as an act of cementation, a technique used in antiquity to separate gold from its alloyed metals, mainly copper. In parallel, the tabernacle symbolism reveals that pure gold is a marker of YHWH's theophany whereas gold-copper alloy is associated with the man-god relationship. Consequently, instead of condemning idolatry, the cementation treatment of the golden calf symbolizes the abortion of the project of divine residence in the tabernacle, the re-establishment of YHWH's distance from humankind, and the restoration of an intermediate divine figure between YHWH and the Israelites. It is concluded that, in Exodus 32, the transgression inherent in the making of the golden calf results from the combination of two antagonistic goals: the indirect worship of YHWH via the golden calf and closeness to the supreme deity via the tabernacle project.

KEYWORDS: Golden calf; theology of gold; cultural metallurgy; early Yahwism; tabernacle; book of Exodus

A INTRODUCTION

The construction of the golden calf (Ex 32:1-5) is among the most dramatic events related in the Pentateuch. Alongside the sin of renouncing the conquering of the Promised Land (Num 14:2-4), it is the only transgression which led YHWH intending to annihilate the people of Israel (Ex 32:10; Num 14:11-12). After cancelling this decision (Ex 32:14), YHWH appoints a divine emissary to bring the Israelites to the Promised Land (Ex 32: 34). In doing so, he fulfils his promise given to the patriarchs (Ex 33:1-2) but renounces becoming the God of Israel (Ex 33:5). The image of Moses shattering the tablets of the covenant (Ex 32:19) confirms the end of the alliance between YHWH and the Israelites concluded just before at Sinai. The renunciation of the project of construction of the tabernacle, the divine residence among the Israelites, expresses a similar break of the the special link between YHWH and the

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Israelites.¹ These overwhelming incidences reveal that the fabrication of the golden calf challenged the most important fundamentals of ancient Yahwism. But what are they?

As the golden calf is a representation of a deity (Ex 32:1, 4), the simplest justification is to interpret its fabrication as a transgression of the Decalogue prohibiting both the cult of deities other than YHWH (Ex 20:3) and their worship through statuettes and figurines (Ex. 20:4-5). The possible conflation of the golden calf with calf-shaped gods such as Baal in Canaan², Re, Apis or Ptah in Egypt³ or Sîn in Mesopotamia⁴, supports the premise of Israelites' inclination to the cult of foreign gods at the expense of the worship of YHWH.

Today, this interpretation is challenged by scholars arguing that the Israelites in Exodus approached the golden calf as a substitute for Moses, not for YHWH (Ex 32:1).⁵ The celebration around the golden calf is even defined by Aaron as YHWH's festival (Ex 32:5), meaning that the calf necessarily integrates the sphere of YHWH's worship. These observations call for alternative explanations.

In the ancient Near East, the calf was the icon of the favourite representative of the supreme god, himself symbolized by a bull.⁶ A parallel

¹ This renouncement emanates from YHWH's decision to leave the Israelites (Ex 33:3) and to replace the project of his permanent residence (the tabernacle) by occasional appointments in a "tent of meeting" positioned out of the domain of the Israelites (Ex 33: 7-11).

² William F. Albright, *Archaeology and the Religion of Israel* (Baltimore: John Hopkins University Press, 1946), 84-87; Helmer Ringgren, *Israelite religion* (Philadelphia: Fortress Press, 1966), 42-44; Ronald E. Clements, *Exodus* (Cambridge: Cambridge University Press, 1972), 206.

³ Robert Pfeiffer, "Images of Yahweh," *JBL* 45 (1926), 221-222; Eva Danelius, "The Sins of Jeroboam ben-Nabat," *JQR* 58 (1967), 95-114; John N. Oswalt, "The Golden Calves and the Egyptian Concept of Deity," *Evangelical Quarterly* 45 (1973), 13-15.

⁴ Julius Lewy, "The Late Assyro-Babylonian Cult of the Moon and Its Culmination at the Time of Nabonidus," *HUCA* 19 (1945), 405-489; Andrew Key, "Traces of the Worship of the Moon God Sin among the Early Israelites," *JBL* 84 (1965), 20-26; Lloyd R. Bailey, "The Golden Calf," *HUCA* 42 (1971), 112.

⁵ Youn H. Chung, *The Sin of the Calf. The Rise of the Bible's Negative Attitude Towards the Golden Calf* (London: Bloomsbury, 2010), 6, 16; Myung S. Suh, *The Tabernacle in the Narrative History of Israel from the Exodus to the Conquest* (New York: Peter Lang, 2003), 85-90; Nahum M. Sarna, *Exodus* (Philadelphia: Jewish Publication Society, 1991), 203; Yehezkel Kaufmann, *The religion of Israel* (Chicago: University of Chicago Press, 1960), 271; R. Walter L. Moberly, *At the Mountain of God – Story and Theology in Exodus 32-34* (Sheffield: JSOT Press, 1983), 47.

⁶ See Daniel E. Fleming, "If El is a Bull, Who is a Calf? Reflections on Religion in Second-Millennium Syria-Palestine," *Eretz-Israel – Frank Moore Cross Volume*, (1999), 24-25; Michael B. Hundley, "What is the Golden Calf?" *CBQ* 79 (2017), 571.

reality exists in the Bible, through the figure of the emissary of YHWH.⁷ This divine figure is closely related to Israel in the Bible.⁸ Moses first encountered YHWH through his divine emissary (Ex 3:2). After that, the emissary of YHWH led the Israelites fleeing from Egypt, and even protected them from the Egyptian army (Ex 14:19-20). Consequently, the request of the Israelites to make a god "who shall go before us" (Ex 32:1) indicates that the golden calf is probably a representation of the divine emissary of YHWH.⁹

This premise finds support in the parallel existing between the golden-calf account in Exodus 32 and the golden calves stationed by Jeroboam in Bet-El and Dan (1 Kgs 12:25–33).¹⁰ In the way they are described in Kings, Jeroboam's golden calves are not considered idolatrous by the author of Kings, but rather as inappropriate worship of YHWH.¹¹ This view is confirmed in 1 Kgs 12:27–28, which explains that the setting of a golden calf in Bet-El was intended to challenge the worship of YHWH in the Jerusalem temple, not to abolish it.¹² In the light of this parallel, the golden calf should not be approached as a case of idolatry. At best, it becomes an improper mode of YHWH's worship. This

In the Ugarit literature (KTU 1.3 iii 40-48), this calf representation is associated with Yam, the beloved son of El.

⁷ e.g. Gen 16:1-11; Num 22:22-35; 2 Kgs 19:35; Zech 1:11-12.

⁸ e.g. Gen 22:11,15; 24:7,40; Judg 6:11-2, 21-22; 13:16-20; Mal 3:1.

⁹ Indeed, scholars already suggested in the past that the golden calf in Exodus 32 should be treated as the figuration of an intermediate divine being between the Israelites and YHWH, introduced in order to replace Moses in this role. See Moberly, *Mountain of God*, 48; Sarna, *Exodus*, 218; Terence E. Fretheim, *Exodus* (Louisville: John Knox, 1991), 281-282; William H.C. Propp, *Exodus 19-40 – A New translation with Introduction and Commentary* (New York: Doubleday, 2006), 577; Dmitri M. Slivniak, "The Golden Calf Story: Constructively and Deconstructively," *JSOT* 33 (2008), 22. James Watts ("Aaron and the Golden Calf in the Rhetoric of the Pentateuch." *JBL* 130 [2011], 424) notices, concerning Exodus 32, that "*The story's themes do not accord well with its usual reputation as depicting Israel's sin of idolatry. [...] The dominant theme in ch. 32 instead revolves around credit for the exodus*".

¹⁰ For analysis of the parallel, see Moses Aberbach and Leivy Smolar, "Aaron, Jeroboam and the Golden Calves," *JBL* 86 (1967), 129-140; John R. Spencer, "Golden Calf," *The Anchor Bible Dictionary*, vol. 2, 1066; Propp, *Exodus 19-40*, 552, 578; Thomas D. Dozeman, *Commentary on Exodus* (Grand Rapids: Eerdmans, 2009), 687; Watts, "Aaron and the Golden Calf," 418.

¹¹ Henry W.F. Saggs, *The Encounter with the Divine in Mesopotamia and Israel* (London: Athlone, 1978), 23; Dozeman, *Exodus*, 690; Benjamin D. Sommer, *The Bodies of God and the World of Ancient Israel* (Cambridge: Cambridge University Press, 2009), 53.

¹² Chung (*The sin of the calf*, 8) assumes that "... *from the very beginning the golden calf was associated with the cult of YHWH*". The fact that King Jehu, praised for his zeal for YHWH, did not remove these calves when he eradicated the cult of Baal (2 Kgs 10:15–30) confirms that they were regarded as expressions of YHWH-worship.

interpretation is important for clarifying the motivation for the fabrication of the golden calf immediately after the Sinai covenant, and even the participation of Aaron in this venture. But it also introduces a new problem. The breakdown of the Sinai alliance and YHWH's withdrawal from amid the Israelites seems disproportionate if the transgression of the golden calf is not idolatry, but an inappropriate mode of worship of YHWH. This discrepancy suggests that something fundamental still needs clarifying regarding the nature of the transgression and/or its implications.

B THE DIVINE REACTION TO THE GOLDEN CALF

We learn from Ex 32:1 that the golden calf materializes the wish of the Israelites to have a god who "shall go before us" (*yēl^ekū lēpānēnū*) in the conquest of the Promised Land (Ex 32:1). And at the end of the golden calf episode, we surprisingly read that YHWH fulfils this request. In Ex 32:34, he explicitly appoints a divine emissary for ruling the Israelites and guiding them to the Promised Land (Ex 32:34; 33:2). If so, we may conclude that the worship of the divine emissary is not regarded as a sin *per se*. It rather looks incompatible with the presence of YHWH among the Israelites. This interpretation finds support in an examination of the terminology attached to the fabrication of the golden calf in Exodus 32. Moses defines it as a *great sin* (*ḥāṭā'ā gēdōlā*) once he addresses Aaron (v. 21), the Israelites (v. 30) and even YHWH (vv. 31-32). But surprisingly, this expression, or even the mere mention of sin, is absent from the way YHWH announces the event to Moses for the first time (Ex 32:7-9). The whole event is described in terms of the corruption (*śihēt*) of the people (v. 7) and its deviation (*sārū*) from the divine commandments (v. 8). It is also interpreted as an expression of the inability of the Israelites to self-transform into the people of YHWH, through their description as a *stiff-necked people* (v. 9). But it remains unclear from these verses whether these negative views refer to the fabrication of the golden calf, or to the orgiastic festivals organized around it. The notion of sin integrates the divine rhetoric only in Ex 32:33-34, after Moses introduced it. But even in these two verses, the reference to the golden calf remains evasive.¹³

That the golden calf is approached differently by Moses and YHWH is revealed by the consequences handed down by each. Moses, who approaches the fabrication of the golden calf as a great sin, calls the Levites to kill every participant (Ex 32:26-28), to definitively erase this 'evil' from Israel. From verse 25, we learn that the anarchy (*pr*) reigning among the people the day after the festival, motivated Moses' punishment. But such a situation also reveals that

¹³ The claim "Whoever has sinned against me, I will blot out of my book" (Ex 32:33b) is too general to refer specifically to the golden calf. The same vagueness characterizes the subsequent claim: "Nevertheless, in the day when I visit, I will visit their sin upon them" (Ex 32:34b).

Moses here attempts to palliate the absence of divine chastisement. And this divine passivity contrasts with the mention of 24,000 Israelites "killed by YHWH" after the orgiastic festivities with the Midianites (Num 25:8–9).¹⁴

Exodus 32 mentions a divine reaction, but it is abnormally weak and delayed. It only comprises a promise of future vengeance and a vague mention of YHWH 'striking' (*ngp*) the Israelites, which is devoid of any detail concerning the time, location, amplitude and nature of the plague (Ex 32:34–35). It does not eradicate the impression of YHWH's disengagement from the Israelites consecutive to the event.

C THE TWO APPROACHES OF YHWH'S WORSHIP IN ISRAEL

We read in Ex 33:2-3 that the cancellation of the project of divine residence (= the tabernacle) amid the Israelites is a consequence of the appointment of the divine emissary, that is, the fulfilment of their initial request expressed through the golden calf:

²I will send an emissary before you, and I will drive out the Canaanites, the Amorites, the Hittites, the Perizzites, the Hivites, and the Jebusites. ³Go up to a land flowing with milk and honey; but I will not go up among you, lest I consume you on the way, for you are a stiff-necked people (Ex 33:2-3).

The conjunction of these claims yields a paradoxical situation. On the one hand, the book of Exodus claims that YHWH retires from the Israelites because their character makes it unviable for him to dwell among them. And for this reason, YHWH appoints his emissary for ruling and protecting them. On the other hand, we read that the Israelite's request for a divine emissary fulfilling these functions is the source of the incompatibility that leads YHWH to cancel the Sinai alliance. If these two aspects belong to the original story, the simplest solution resolving this crux is to assume an essential incompatibility between two possible modes of relation with YHWH, direct and indirect. In such a case, the divergence between Moses' and YHWH's reaction to the crisis reflects two representations of the Israelite religion. A first one (the Mosaic reaction) promotes the idea of divine residence among the Israelites. It is accompanied with a severe system of repression of the cult of YHWH through intermediate deities in order to preserve the viability of the project. The other approach (the divine reaction) renounces granting the whole of Israel the status of the people of YHWH and reserves this position for elite among the people. This alternative view is considerably more tolerant concerning the diversity of ways YHWH may be worshipped.

¹⁴ Similar cultic deviations have similar lethal consequences in Num 11:1-3, 33-34; 14:26-35; 16:28-35; 17:9-14; 21:5-6.

Both approaches reflect the incompatibility of the direct cult of YHWH (and by extension, of the divine presence among the Israelites) with that of any other deity, including his own divine emissary. The first one (Moses' approach) particularly fits the religion of the Judah Kingdom, organized around the Jerusalem sanctuary, that is, the homologue to the tabernacle granted the divine presence. Its repressive dimension finds an echo in the Hezekiah and/or Josiah reforms of the cult (2 Kgs 18:4; 23:4-25). The theological alternative illuminated here (YHWH's approach) fits the religion of the Northern Kingdom, characterized both by a broad variety of cults and by the golden calves symbolizing it (1 Kgs 12:28-33).

This latter position calls for further clarification. Though exclusiveness is a fundamental dimension of the worship of YHWH, the motivation for such a request is never explicit in the Bible. This prohibition is attached to an essential attribute of YHWH, *qannā'*. This is explicit in Ex 34:14, in a text promoting the renewal of the YHWH-Israel alliance and the construction of the tabernacle after the crisis of the golden calf:

For you shall worship no other god, for YHWH, whose name is *Qannā'* (קַנָּא), is a *qannā'* God.

The same divine attribute is also encountered in Joshua 24, in a context exposing the two theological solutions to the problem of exclusiveness of the worship of YHWH:

¹⁴Now therefore fear YHWH and serve him in sincerity and in faithfulness. Put away the gods that your fathers served beyond the River and in Egypt, and serve YHWH. ¹⁵And if it is evil in your eyes to serve YHWH, choose this day whom you will serve, whether the gods your fathers served in the region beyond the River, or the gods of the Amorites in whose land you dwell. But as for me and my house, we will serve YHWH (Jos 24:14-15).

As an answer, the Israelites here choose the option of direct worship of YHWH (vv. 16-18). However, immediately after, the author, through the voice of Joshua, invites them to reconsider their decision, because of the *qannā'* attribute of YHWH and its dangerous dimension:

¹⁹But Joshua said to the people, "You are not able to serve YHWH, for he is a holy God. He is a *qannô'* God; he will not forgive your transgressions or your sins. ²⁰If you forsake YHWH and serve foreign gods, then he will turn and do you harm and consume you, after having done you good."

The *qannā'* attribute is generally regarded as expressing divine jealousy. But the term *qannā'* also designates the recycling of metals by furnace

remelting.¹⁵ It invites us to examine whether metallurgical considerations about the fabrication and destruction of the golden calf may help us to understand the meaning of this exclusiveness.

D METAL IN THE GOLDEN CALF EPISODE

Exodus 32 lends unusual weight to gold, the metal the statuette is made from. Whereas six of its thirty-five verses (4, 8, 19–20, 24, 35) refer to the shape of the calf, seven mention its metal. Exodus 32 advises us about the origin of the gold (women’s earrings, vv. 2–3) and it supplies unexpected details about the fabrication of the statuette (vv. 4, 24). The way Moses summarizes the sin also betrays the abnormal importance of gold:

This people has sinned a great sin, they have made for themselves a god of gold (*’ēlohē zāhāb*) (Ex 32:31b).

This claim suggests that the use of gold in manufacturing the statuette is a part of its incompatibility with the worship of YHWH.

In Exodus 32, the metal used for casting the golden calf originates from jewels donated by the Israelites (vv. 2–3). The importance of this origin is confirmed by the mention of the Israelites’ personal jewellery (*’ādî*) again in Ex 33:4–6.¹⁶ Being advised of the divine decision to stop the construction of the tabernacle, the Israelites divest themselves of their jewels as an act of mourning:

When the people heard this disastrous word, they mourned, and no one put on his jewels (*’ed^eyō*) (Ex 33:4).

Yet strikingly, YHWH reiterates this request immediately after:

For YHWH had said to Moses: Say to the people of Israel, ‘You are a stiff-necked people; if for a single moment I should go up among you, I would consume you. So now take off your jewels (*’ed^eyēkā*), that I may know what to do with you.’⁶ Therefore the people of Israel stripped themselves of their jewels (*’ed^eyām*), from Mount Horeb onward (Ex 33:5–6).

¹⁵ Godfrey R. Driver, “Ezekiel’s Inaugural Vision,” *VT* 1 (1951), 60–62; Nissim Amzallag and Shamir Yona. “Differentiation of the qayin Family of Roots in Biblical Hebrew,” *Semitica* 59 (2017), 297-332. In the Bible, this metallurgical meaning is especially visible in divine context. See Nissim Amzallag, “Furnace Re-melting as Expression of YHWH’s Holiness: Evidence from the Meaning of qanna (קנן) in Divine Context,” *JBL* 134 (2015): 233-252.

¹⁶ For the identification of *’ādî* as denoting pieces of jewelry in Exodus 33, see Dale R. Davis, “Rebellion, Presence and Covenant: A Study in Exodus 32-34,” *WTJ* 44 (1982), 80; *HALOT* 2, 791; Cornelis, Houtman, *Exodus*, vol. 3 (Leuven: Peeters, 2000), 690.

The simplest justification for this intriguing repetition is to assume the mixing of two distinct sources, each concisely evoking the event.¹⁷ Scholars who reject this explanation speculate that verse 4 mentions a partial removal that is completed only after the divine request.¹⁸ Verses 5 and 6 have also been treated as a gloss,¹⁹ as a symbolic act of divorce/abrogation of the covenant,²⁰ or even as a metaphor reminding Israel that it remains under judgment even after it repented and mourned (verse 4).²¹

However, a comparison of verses 4 and 5 reveals substantial differences. As a consequence of mourning, the removal remains temporary in verse 4. Instead, the divine request associated with YHWH’s inability to dwell among the Israelites is indefinite in verse 5. A parallel emerges therefore between the distance of the jewels from their owners’ bodies and the relocation of the tent of meeting far from the Israelites’ camp (Ex 33:7). It creates a correlation between the golden jewels worn by the Israelites and the divine presence among them.²²

Beyond the association of gold with wealth, joy, and beauty (verse 4), gold appears in verses 5-7 as an expression of the divine presence. This interpretation emanates from the rare term *’ădî* used in Ex 33:4-6 to denote gold jewellery and its alliterations:

- *’ădî* and *mô’ēd*: The three occurrences of *’ădî* in Exodus 33 are immediately followed by the mention of the tent of meeting and the curious insistence on its nomenclature as *’ōhel mô’ēd* (Ex 33:7a). This successive emphasis on *’ădî* and on *mô’ēd* promotes a homology between gold jewellery and the encounter with YHWH in the tabernacle.
- *’ădî* and *’ēdût*: Phonetically, *’ădî* is closely related to *’ēdût*, another term frequently found in Exodus 25–40 and rare in most other Biblical

¹⁷ Brevard S. Childs, *Exodus - A commentary* (London: SCM Press, 1974), 489 and ref therein.

¹⁸ Propp, *Exodus 19-40*, p. 598. According to Moberly (*At the mountain of God*, 61), such an oddity is justified as alluding to an incomplete repentance by the Israelites in v. 4 b. Joel Baden (“On Exodus 33,1-11,” *ZAW* 124 [2012], 333–335) ranges even farther, suggesting that the meaning of v. 4 into “*none took off his finery*” should be inverted and understood as consecutive to mourning, thereby explaining the subsequent divine request (vv. 5-6).

¹⁹ Houtman, *Exodus 3*, 692.

²⁰ Dozeman, *Commentary on Exodus*, 723.

²¹ Herbert C. Brichto, “The Worship of the Golden Calf: A Literary Analysis of a Fable on Idolatry,” *HUCA* 54 (1983), 22.

²² The reference in verse 6 to Mount Horeb, the mountain of god, confirms that the gold in verses 5–6 is closely related to the terrestrial presence of YHWH.

sources.²³ *’ēdūt* is used to denote the ark in the holy of holies (*’ārôn hā’ēdūt*, Ex 25:22; 26:33; 30:6, 26, or simply *’ēdūt* in Ex 30:36) and even the entire tabernacle (*’ōhel hā’ēdūt*, Ex 38:21). Furthermore, the tablets of the covenant (Deut 9:9, 11, 15) are defined as *the tablets of the ’ēdūt* in Ex 31:18, 32:15, and 34:29. This preference of *’ēdūt* again reinforces an association between gold (jewels) and YHWH’s covenant, materialized by the tabernacle.²⁴

- *’ādî* and *yd’*: The root *yd’* is most common in Exodus 33 (seven instances in verses 5, 12, 13, 16, 17). The redundancies of its use in verses 12 and 13 and the singular formulation of the question (*yīwwāda’*) in verse 16 generate a phonetic resonance with the three successive mentions of jewels as *’ādî* in verses 4–6 (including their interaction in Ex 33:5a). This wordplay promotes interaction between gold and the deep knowledge of YHWH.

These interferences look like a literary device introduced for emphasizing that gold in Exodus 32-33 is not merely an expression of wealth, magnificence and blessing, all incompatible with mourning. Rather, it is a marker of YHWH’s presence among the Israelites.²⁵ By extension, the theological dimension of the metal constituting the golden calf is probably important for elucidating the problem of exclusiveness of YHWH’s worship treated through this affair.

E THE DESTRUCTION OF THE STATUETTE – CURRENT EXPLANATIONS

One of the most striking features concerning the metal of the golden calf concerns its destruction, reported in Ex 32:20:

He [Moses] took the calf that they had made and burned it with fire and ground it to powder and scattered it on the water and made the people of Israel drink it.

Such a destruction of the metal deserves a special attention, because the gold the Israelites captured from their enemies was not destroyed together with

²³ Twenty-one among the 81 biblical occurrences of *’ēdūt* are found in Exodus. The expression *miš’kan hā’ēdūt* in Ex 38:21 suggests that *’ēdūt* might be intentionally introduced by the author of Exodus, beyond the necessity of the narration.

²⁴ The existence of word play between *’ādî* and *’ēdūt* was already noticed by Umberto Cassuto (*A Commentary on the Book of Exodus* [Jerusalem: Magnes Press, 1967], 428–429) and Benno Jacob (*Exodus* [Hoboken: Ktav Publishing, 1992], 960) and is reinforced by evidence that *adu/adi* in Akkadian is congruent to the Hebrew *’ēdūt* (Nahum M. Sarna, *Exploring Exodus – The Heritage of Biblical Israel* [New York: Shoken, 1986], 208).

²⁵ Nissim Amzallag, “Beyond Prestige and Magnificence – The Theological Significance of Gold in the Israelite Tabernacle,” *HTR* 112 (2019), 296-318.

the idols (e.g., Jos 6:24; Num 31:50–54; I Chr 18:10–11). The use of gold for the manufacture of idols does no more preclude its potential reuse by the Israelites and even its consecration to YHWH.²⁶ Furthermore, the destruction of the metal in Exodus 32 remains obscure due to the high chemical stability of gold. At least six explanations have been proposed to account for these oddities concerning the treatment of the statuette.

- *Stereotyped expression*: Ex 32:20 is sometimes approached as a stereotyped formula involving three successive operations (burning, grinding into fine powder, and scattering) that add up to annihilation. If so, this verse does not truly account for burning the golden calf but merely for its destruction.²⁷ The ultimate action, however—the Israelites' drinking of the powder—does not belong to such a stereotyped mode of destruction. It implies the material existence of a powder, and by extension, the reference to a genuine treatment of gold able to produce it.
- *Corruption of an original source*: Exodus 32 may be the corruption of an original text in which the object destroyed was not the golden calf.²⁸ As a variant, Exodus 32 may bracket two independent traditions, the first relating to a calf of wood (burnt by Moses) and the other to a golden calf (not burnt).²⁹ These explanations imply that the corruption introduced in Exodus 32 recurs in Deut 9:21, in which the destruction of the golden calf is credited to the same process.³⁰ They also require that the original details

²⁶ This use was conditioned only on preliminary purification of the metal by fire (Num 31:21-23), a requirement that was probably expanded into the re-melting of all metal comprising figurines, idols, and other implements associated with cults of other deities.

²⁷ This explanation finds support in an Ugaritic source (CTA 6.ii.32-36) relating to the destruction of Mot by Anat and mentioning the same sequence of three actions: "With fire she burnt him; With millstones she ground him; In a field she scattered him; His flesh indeed the birds ate". See Samuel E. Loewenstamm, "The Making and Destruction of the Golden Calf," *Biblica* 48 (1967), 481-490 and "The Making and Destruction of the Golden Calf – A Rejoinder," *Biblica* 56 (1975): 330-348. This explanation is well accepted by scholars. See for example F. Charles Fensham, "The Burning of the Golden Calf and Ugarit," *IEJ* 16 (1966), 191-193; Childs, *Exodus*, 569; Sarna, *Exploring Exodus*, 219; Spencer, "Golden Calf," 1068; Houtman, *Exodus* 3, 660; Propp, *Exodus 19-40*, 558; Dozeman, *Exodus*, 710; Victor P. Hamilton, *Exodus – An Exegetical Commentary*, (Grand Rapids: Baker Academics, 2011), 544.

²⁸ David, Frankel, "The Destruction of the Golden Calf: A New Solution," *VT* 44 (1994), 330-339; Hamilton, *Exodus*, 544.

²⁹ Sigo Lehming, "Versuch zu Ex. XXXII," *VT* 10 (1960), 16-50; Leo G. Perdue, "The Making and Destruction of the Golden Calf – A Reply," *Biblica* 54 (1973), 237-246.

³⁰ Also the mangled tradition evoking a wooden statuette is ignored in Ps 106:19 and Neh 9:18.

about the destruction of the golden calf have been deleted from the text of Exodus 32. These conditions render this explanation unlikely.

- *Composite nature of the golden calf:* Alternately, scholars claimed that the operations reported in Ex 32:20 refer to the statuette's wooden core and not to its overlaying plates of gold.³¹ This explanation is challenged by the mention, in Exodus 32, of Aaron's casting the calf (*'ēgel massēkā*, v.8) into a mould (v. 4).³² This process is mentioned again in v. 24, when Aaron explains how he manufactured the golden calf: "So I said to them, 'Let any who have gold take it off.' So they gave it to me, and I threw it into the fire, and was cast (*wayyēšē*) this calf" (Ex 32:24).³³
- *Grinding:* The crux was also resolved in assuming that the successive actions in Ex 32:20 refer to different parts of the statuette: the wooden support is burnt and the metal is ground and scattered.³⁴ This explanation clashes with Ex 32:20 specifying that the entire treatment (including burning) was applied to the calf statuette.
- *Melting:* The burning in Ex 32:20 is sometimes interpreted as a re-melting of the metal constituting the golden calf.³⁵ Such use of the root *šrp*, however, is not evidenced elsewhere in the Bible. Furthermore, the need for preliminary re-melting is puzzling if the metal is to be ground immediately after.
- *Chemical transformation:* In his commentary on Exodus 32, the Jewish medieval exegete Abraham Ibn Ezra hypothesized that Moses added a substance to the metal of the golden calf that provoked its irreversible degradation (= burning) and fragmentation. Later, alchemists also interpreted this destruction of gold in Exodus 32 as a process of fumigation with lead or quicksilver in a strong acidic environment.³⁶ Nevertheless, the mention of such a process in Exodus is unlikely due to the inability to produce strong acids in antiquity.

³¹ Cassuto, Exodus, 412, 419; Ludwig Wächter, "Afar," *Theological Dictionary of the Old Testament* 11, 260; Propp, *Exodus* 3, 550, 559.

³² The specification of the golden calf as a figurine of cast metal (*massēkā*) recurs in Ps 106:19 and Neh 9:18.

³³ About the metallurgical meaning of *yš'* as *to cast* in Ex 32:20, see Raymond C. van Leeuwen, "A Technical Metallurgical Usage of *צָרַף*," *ZAW* 98 (1986), 112-113.

³⁴ Martin Noth, *Exodus - A Commentary* (London: SCM, 1965), 249; Brichto, "Golden calf," 11.

³⁵ J. Philip Hyatt, *Commentary on Exodus* (London: Oliphants, 1971), 308; Jacob, *Exodus*, 932.

³⁶ Raphael Patai, "Biblical Figures as Alchemists," *HUCA* 54 (1983), 225-228.

None of the six proposed interpretations of Ex 32:20 is satisfying. But this conclusion is not surprising. Out of the last explanation, none ascribes any special importance to gold in the treatment performed by Moses. But the importance devoted to gold in Exodus 32-33 calls us to interpret Ex 32:20 in the light of the specific properties of the metal used for casting the statuette.

F CEMENTATION IN EXODUS 32:20

We read in Ex 32:2-3 that the metal of the figurine originates from gold earrings. This detail is of importance, because the gold used in Antiquity for jewellery was neither natural gold-silver alloys (the most frequent form of native gold)³⁷, nor pure gold. Rather, substantial amounts of copper (between 5-75%) were intentionally added to gold used for jewellery.³⁸ This alloying process restores the intense yellow appearance (that recalls pure gold) to pale gold-silver alloys.

³⁷ Thomas G.H. James, "Gold Technology in Ancient Egypt – Mastery of Metal Working Methods", *Gold Bulletin* 5 (1972), 39; Christoph J. Raub, "The Metallurgy of Gold and Silver in Prehistoric Times," in *Prehistoric Gold in Europe – Mines, Metallurgy and Manufacture* (eds Giulio Morteani and Jeremy P. Northover, Dordrecht: Kluwer, 1995), 245. This natural variance in silver content explains the importance, in the Bible, of the mention of the provenance of gold (Hawilah, Gen 2:11; Ophir, Isa 13:12; Ps 45:10; Job 22:24; 28:16) and the specific mention of the quality of the gold that originated in a given a mining area (ex. Gen 2:12).

³⁸ In ancient Egypt, the concentration of copper in gold (especially in jewellery) generally ranged from 5 percent to 10 percent, aiming for intentional addition of copper, see Volker Pingel, "Technical Aspects of Prehistoric Gold Objects on the Basis of Metal Analysis," in *Prehistoric Gold in Europe – Mines, Metallurgy and Manufacture* (eds. Giulio Morteani and Jeremy P. Northover, Dordrecht: Kluwer, 1995), 388-389; Thilo Rehren, Karsten Hess and Graham Philip, "Auriferous Silver in Western Asia: Ore or Alloy?" *JHMS* 30 (2001), 7; Jack Ogden, "Metals," in *Ancient Egyptian Materials and Technology* (eds. Paul T. Nicholson and Ian Shaw; Cambridge: Cambridge University Press, 2000), 148-175; Lore G. Troalen, Maria F. Guerre, Jim Tate and Bill Mangley, "Technological Study of Gold Jewelry Pieces Dating from the Middle Kingdom to the New Kingdom in Egypt," *ArcheoSciences* 33 (2009), 111-119. An examination of ancient Egyptian documents shows recipes for the preparation of low-grade gold with a gold/copper ratio of 37.5/62.5 percent (9 carat gold). See Leslie B. Hunt, "The Oldest Metallurgical Handbook. Recipes of a Fourth Century Goldsmith," *Gold Bulletin* 9 (1976), 28. Analysis of Mesopotamian gold from the fourth millennium BCE reveals a similar practice of copper alloying (again between 5 percent and 70 percent of copper added) and Mesopotamian texts from the second millennium BCE refer to a general addition of 25–45 percent copper to native gold for use of the latter metal in jewellery. See Martin Levey, "The Refining of Gold in Ancient Mesopotamia," *Chymia* 5 (1959), 31-36. The presence of copper (5–25 percent, but sometimes up to 50 percent) in Phoenician gold jewellery from Spain indicates that similar practices existed in the Iron Age Levant (Pingel, "Technical Aspects," 386, 393). For comparison, copper is spontaneously present in native gold in a concentration lower than 1–2 percent.

It also facilitates casting (by lowering the melting point) and hammer working (by improving the mechanical properties of the metal).³⁹

The raw material used for casting the golden calf was therefore a gold-copper alloy. In describing how the statuette was produced, the author specifies the lack of intermediate processes between re-melting the jewels and casting the calf (Ex 32:24).⁴⁰ It means that the statuette was made of gold-copper alloy. This detail opens a new perspective of interpretation of Ex 32:20: the destruction of the metal might not concern gold, but the metals mixed with it. In other words, it might describe a process of purification of the metal used for casting the statuette.

Two techniques of metal purification existed in the ancient Near East. The first one, *cupellation*, was extensively practised for extracting silver from argentiferous lead, because it is especially efficient in removing heavy metals.⁴¹ But *cementation*, instead of *cupellation*, was the preferred technique for gold de-alloying.⁴² This process involves the spread of a mineral paste (cement) on the alloy. Then, the metal is sealed in a ceramic pot and exposed to the fire of a furnace. In this oxygen-rich environment, the copper mixed with gold reacts with the salts of the cement and transforms it into oxides. At the end of this process, the cement rich in copper salts may be crushed and even added to a furnace for

³⁹ Pingel, "Technical Aspects," 394-395.

⁴⁰ The same conclusion emanates from Ex 32:4, describing the process.

⁴¹ Theodore H. Robinson, "The Text of Jeremiah vi 27-30, in the Light of Ezekiel xxii 17-20," *JTS* 16 (1915), 486; Jerome O. Nriagu, "Cupellation: The Oldest Quantitative Chemical Process," *Journal of Chemical Education* 62 (1985), 668. In this process, the metal to be purified is placed in a crucible and heated. The porosity of the crucible wall and the blowing of air on the surface of the crucible stimulate the oxidation of the undesirable heavy metals. Once oxidized, these elements aggregate on the bottom, the wall, or the top of the crucible, or they are carried away by the air blast upon the surface of the molten metal. When cupellation is practised to improve the purity of gold or silver, it is sometime enhanced by the introduction of lead in the crucible, stimulating aggregation and separation of impurities.

⁴² John F.H. Notton, "Ancient Egyptian Gold Refining. A Reproduction of Early Techniques," *Gold Bulletin* 7 (1974), 50-56. Cementation is identified in the second millennium BCE in Mesopotamian and Egyptian sources (Levey, "Gold Refining in Mesopotamia," 33-35; Notton, "Egyptian Gold Refining," 53). It was probably more anciently practiced in the Southern Levant. Rudiments of the technique of gold purification by cementation are identified in chemical analysis of the gold rings from Nahal Qana (southern Levant), dated from the Chalcolithic period. See Paul Craddock, "Historical Survey of Gold refining. 1. Surface Treatment and Refining Worldwide, and in Europe prior to 1500 AD," in *King Croesus' Gold – Excavations at Sardis and the History of Gold Refining* (eds. Andrew Ramage and Paul Craddock; London: British Museum Press, 2000), 27-29.

smelting the metal it contains.⁴³ An Egyptian document from the 4th-3rd century BCE (Leiden Papyrus X) details this process as follows:

For treating gold, or for thoroughly purifying it and making it brilliant. Misy 4 parts; alum 4 parts; salt 4 parts. Grind with water and having coated the gold with it place in an earthenware vessel put in a furnace and luted with clay and heated until these substances have become molten, then withdraw it and scour carefully.⁴⁴

Also in the Bible, cementation is mentioned as the preferred technique of gold purification, alongside the cupellation process used for silver. This duality is visible in Prov 17:3 (“*The cupel (maṣ^erēp) is for silver, and the furnace (kûr) is for gold, and YHWH tests (ûbōḥēn) hearts*”) and in Prov 27:21 (“*The cupel (maṣ^erēp) is for silver, and the furnace (kûr) is for gold, and a man is tested by his praise.*”)⁴⁵ Consequently, if the treatment of the golden calf refers to a de-alloying process, this latter is probably cementation. An examination of the four successive actions described in Ex 32:20 supports this premise:

- The first action, the burning of the metal (“*He took the calf that they had made and burned it with fire*”), is especially adapted to purification by

⁴³ The homology between this stone and copper ore is confirmed in the Leiden papyrus by the integration, in preparation of the mud used for cementation, of *misy*, a term evoking mineral components involved in the smelting of copper. For further details about the chemistry of cementation processed in Antiquity, see Paul Craddock, “Replication Experiments and the Chemistry of Gold Refining Cementation,” in *King Croesus' Gold – Excavations at Sardis and the History of Gold Refining* (eds. Andrew Ramage and Paul Craddock; London: British Museum Press, 2000), 175-183.

⁴⁴ Reported by Hunt, “Metallurgical Handbook,” 27. The term *misy* is believed to designate a mixture of iron or copper pyrites. Use of the very same process for gold purification is related in Diodorus siculus, *Book III*, chaps. 12-14. Here Diodorus reports information from a more ancient source, Agatharchides of Cnidus (second century BCE). Despite its relative simplicity, this process has been found especially efficient. Experimenting with the ancient recipe, Notton (“Egyptian gold refining”) found that such cementation yields a 93 percent gold metal from an alloy (silver and copper) that contains only 37.5 percent pure gold, such as that used for jewellery in antiquity.

⁴⁵ The identification of *šrp* as denoting cupellation is confirmed by its preferential association with the metallurgy of silver (Isa 48:10; Zech 13:9; Pss 12:7; 66:10) and the specific use of *šrp* to denote silver in Ugaritic. See Jer 6:29; Mal 3:3. Also in Ps 12:7, the process of cupellation is associated with the verb *zqq*. Since this verb denotes water evaporation in Job 36:27, its use in the context of cupellation apparently reflects the purification of metal through the volatilization that impurities and heavy metals undergo as they are oxidized. The verb *zqq* being associated with the process of refining by cupellation, the mention of *zāhāb mēzūqqāq* in 1 Chr 28:18 or *keseṣ mēzūqqāq* in 1 Chr 29:4 should be considered confirmation that non-alloyed gold and silver were indeed refined by cupellation in ancient Israel.

cementation. This process produces a smoke that dissipates only when gold purification is achieved.⁴⁶ It fits the use of the verb *šrf* (qal), referring to a burning process occurring up to its completion.⁴⁷

- The second action, grinding (“[Moses] *ground it to powder*”), fits the crushing of the cement transformed into a stone in the course of the purification process.
- The third action concerns the powder generated by the previous operation. The text mentions that Moses “*scattered it on the water*”. This expression describes a powder which spreads at first on the surface. It fits the behaviour of a dehydrated material, such as the grounded cement, which has to rehydrate first, in contact with water, before dissolution.
- The fourth action concerns the Israelites drinking the water in which the powder dissolved. Ancient exegetes and modern scholars have noticed the parallel between this practice and the instructions pertaining to the “deviant woman” in Num 5:11–31.⁴⁸ In this prescription, a mineral component is added to the water that the woman suspected of adultery drinks. This mysterious element (there termed *‘āpār*) added to water has been identified with copper ore, used for the abortive effect of copper salts in the early stage of pregnancy.⁴⁹ A similar suspicion of adultery is aimed at the Israelites after the festivities of the golden calf. It is deduced from the verb *šhq* used to describe the festivities around the golden calf in Ex 32:6, whose sexual connotation is explicit in Gen 26:8 and 39:14.⁵⁰

⁴⁶ Experimentally re-enacting the cementation process reported in ancient texts, Notton (“Egyptian gold refining,” 55-56) noticed the production of smoke associated with the use of cementation for gold extraction: “[...] *The test of the Egyptian process were commenced by sealing up portions of the gold alloy with the salt in a commercial sillimanite pot using an alumina cement. This pot was also heated at 800 °C until fuming ceased [...] The gold content of the metal has been raised over 93 percent*”.

⁴⁷ *HALOT* 3, 1359.

⁴⁸ See Cassuto, *Exodus*, 419; Childs, *Exodus*, 569; Sarna, *Exodus*, 219-220; Frankel, “Golden Calf,” 334; Houtman, *Exodus* 3, 659; Propp, *Exodus* 19-40, 559; Dozeman, *Exodus*, 699; Hamilton, *Exodus*, 544. This parallel is already argued in the Talmud (*B. Abodah Zara* 44a) and defended by medieval exegetes such as Saadia and Rashi.

⁴⁹ On the use of *‘āpār* to denote copper ore in biblical Hebrew, see Nissim Amzallag, “The Forgotten Meaning of *‘āpār* in Biblical Hebrew,” *JAOS* 137 (2017), 767-783. The identification of *‘āpār*, in Num 5:17, as *copper ore* is based on the physiological reactions to the ingestion of the potion, mainly bitterness within few minutes, induction of miscarriage within few hours/days, and inhibition of ovulation (a contraceptive effect). See Nissim Amzallag and Yona Shamir, “The Kenite Origin of the Sotah Prescription (Numbers 5.11-31),” *JSOT* 41 (2017), 383-412.

⁵⁰ See Childs, *Exodus*, 566; Propp, *Exodus* 19-40, 553. This interpretation was already advanced by Rashi.

Additionally, the mention of *qôl 'annôt* (Ex 32:18) emanating from the camp of the Israelites suggests an orgiastic element to the golden calf festival.⁵¹ The cement issued in gold de-alloying is rich in the same copper oxides as the copper ore referred to in Num 5:11–31. Consequently, if the treatment in Ex 32:20 is truly a cementation process, the material grounded is a homologue to the grounded copper ore used for preparing the potion in the Sotah prescription, and it has the same effect.

These observations make cementation the most likely explanation of the treatment related in Ex 32:20. It means that the abolition of the worship of the golden calf is immediately accompanied with a de-alloying of the gold constituting it. Following this process, the issue of the purified gold is silenced exactly as YHWH retires. The Israelites remain with the copper salts only.

The significance of this separation of gold-copper alloy remains obscure in Exodus 32-33. However, these chapters are flanked by two large sections devoted to the tabernacle, the site of divine residence among the Israelites (Exodus 25-31, 35-40). The distribution of gold, copper and their alloy in the tabernacle may help us to understand the significance of the de-alloying process in Exodus 32.

G GOLD IN THE TABERNACLE

Two types of gold are mentioned in the tabernacle: pure gold (*zahav tahor*) and ordinary gold (*zahav*), that is, gold alloyed with copper. These two types of gold are not interchangeable, but rather constitute two distinct metals, as made clear from their similar distinction in the description of the project of the tabernacle (Exodus 25-31) and of its construction (Exodus 35-40). Furthermore, the distribution of pure and alloyed gold is not conditioned by their mechanical properties (the *menorah*, for example, is made of pure gold [Ex 25:31] which is inappropriate for its fabrication) nor by any gradient of holiness in the tabernacle. The pure gold *menorah* is positioned in the holy space whereas the cherubim made of alloyed gold are located in the holy of holies (Ex 25:18). This suggests that the use of gold and of pure gold in the tabernacle is determined first of all by theological criteria.⁵²

⁵¹ Though this expression is frequently translated in the context of musical performance, many scholars have identified in *'annôt* a sexual component attached to the collective festivities surrounding the golden calf. For Garry A. Rendsburg ("Hebrew Philological Notes (II)," *Hebrew Studies* 42 (2001), 189), "*ענות* in Ex 32,18 refers to consensual sexual intercourse among the carousing Israelites", so that the expression "the sound of an orgy" captures the meaning of *qôl 'annôt*. A similar interpretation is defended by Propp, *Exodus 19-40*, 557; Hamilton, *Exodus*, 542-543.

⁵² See Amzallag, "*Beyond Prestige and Magnificence*," 304-308.

If the de-alloying of the metal of the golden calf marks the end of the divine presence among the Israelites and the cancellation of the tabernacle project, we expect the gold-copper alloy to be the marker of this man-god relationship in the tabernacle. This premise finds support in the singular use of copper-gold alloy for making the cherubim positioned in the holy of holies, a space where pure gold is almost systematically employed. In Ex 25:22, we read that these cherubim made of gold-copper alloy were the site of meeting with YHWH:

There I will meet with you, and from above the mercy seat, from between the two cherubim that are on the ark of the testimony, I will speak with you about all that I will give you in commandment for the people of Israel.

The association of alloyed gold with man-god communication is confirmed by further evidence. For example, the pure-gold artefacts from the holy space are circumscribed with frames/moulds made of a gold-copper alloy (Ex 25:11-13, 24–26, 28; 30:3-5). These rims establish a boundary between the holy furniture and the priest in contact with them in the sanctuary. The poles moving these artefacts, which are necessarily in contact with the priests, are also overlaid with alloyed gold (see Ex 25:13, 28; 30:5), though technical considerations render the use of pure gold more appropriate. The raiment of the priest entering the tabernacle contains gold. And the dominance of copper-gold alloy in the priest vestment fits the claim of his encountering the deity in the tabernacle.⁵³

These observations suggest that the tabernacle and golden calf are mirrored in Exodus. In the tabernacle, the mixing of copper and gold symbolizes the encounter between YHWH and the Israelites, through the priest, serving as human emissary of both. Also, in the golden calf episode, the statuette representing the divine emissary between YHWH and the Israelites, is made entirely of gold-copper alloy. And the rejection of this mode of contact through a divine emissary, due to its incompatibility with the presence of YHWH among the Israelites, is materialized by a de-alloying process.

⁵³ It is used in the manufacture of the fabric, the ephod, the band, and the breastplate (Ex 28:5, 6, 8, 15). It is also the metal in which the precious stones are set (Ex 28:11, 13, 20) and by which the various pieces of clothing are joined (Ex 28:23, 24, 26, 27). The priestly raiment also includes three small items made of pure gold: chains on the band (Ex 28:14), on the breastplate (Ex 28:22) and a small plate on the turban (Ex 28:36), which constitute the mirror image of the alloyed-gold band in the periphery of the pure gold artifacts in the holy place (see Amzallag, "*Beyond Prestige and Magnificence*," 307-308).

H THE POSSIBLE SOURCE OF EXCLUSIVENESS

The parallel observed here between the golden calf episode and the use of gold-copper alloy in the tabernacle confirms that these metals and their alloying interfere with the man-god interaction in the Israelite theology. It now remains to identify the significance of these beliefs.

The distribution of pure gold in the tabernacle indicates that this metal was approached as the marker of YHWH's presence. The divine origin of gold is confirmed in Genesis, representing gold being scattered on the earth by a stream flowing from the Garden of Eden, the divine domain (Gen 2:12). Consequently, pure gold, by its mere presence in the shrine, traces the activity of the god who produces it and impregnates it with his holiness. Gold is therefore the tracer of the activity of the divine metallurgical workshop.

That this view about gold precedes the Israelite theology is confirmed by the similar views observed in Bronze Age cultures, in which luminosity and timelessness were attached to gold.⁵⁴ In ancient Egypt, for example, gold was the metal that typically conferred holiness on Egyptian sanctuaries.⁵⁵ It was even regarded as the material from which the skin and flesh of the gods were made.⁵⁶ In Mycenaean Greece, the golden funerary mask was not simply a mark of the deceased's social status but rather the symbol and/or marker of his transition from mortality to immortality.⁵⁷ In Bronze Age Europe, too, patterns of gold burial seem to reflect the belief that gold was a metal of divine origin offered to mortals and not the other way around.⁵⁸ This widespread approach to gold in

⁵⁴ As stressed by Helen Whittaker ("Religious Symbolism and the Use of Gold in Burial Contexts in the Late Middle Helladic and Early Mycenaean Periods," *Studi Miceni ed Egeo-Anatolici* 48 [2006], 285), "[...] *The quality of luminosity is universally or near-universally perceived to be associated with the materialisation of the supernatural. Shiny metals, in particular gold, are therefore imbued with religious meaning signifying divine presence.*"

⁵⁵ Sidney Aufrère, *L'univers minéral dans la pensée égyptienne* (Le Caire: Institut Français d'Archéologie Orientale, 1991), 379.

⁵⁶ Kedar-Kopfstein, "Zahav," *TDOT* 4, 35; Sidney H. Aufrère, "L'univers minéral dans la pensée égyptienne: essai de synthèse et perspectives," *Archéo-Nil* 7 (1997), 122, 127.

⁵⁷ Concerning the significance of golden funerary masks among the Mycenaeans, Whittaker ("Religious Symbolism," 283) concludes: "*The indestructibility and immutability of gold in contrast to the impermanence of human flesh serve to make it particularly appropriate as a symbol of immortality [...].*" A similar importance of gold in the transition from death to immortality is observed in ancient Egypt. See Aufrère, *L'univers minéral*, 375-6, 390.

⁵⁸ Christoph Huth, "Gifts from the Gods. A New Look at some Weapons and Vessels from the Metal Ages," in *Diversity of Sacrifices – Form and Function of Sacrificial*

Bronze Age religions transformed the producer of gold into the master of holiness, and even the 'producer' of gods. This transcendent position of the divine gold-maker regarding all the other deities promotes him to the status of god of gods, the status of YHWH in the Bible (Deut 10:17; Ps 136:2).

In the Bronze Age, the divine gold-maker (distinct from the divine goldsmith) is a deity whose identity is silenced in official religions. This feature, combined with the close relationship between gold and holiness in the Bronze Age, suggests that this silence is intentional, and reflects the esoteric nature of this deity. This situation recalls that of YHWH, whose name was ignored at first, before becoming the official deity of the Israelites (Ex 3:13-15; 6:3). It also recalls the metallurgical background of the worship of YHWH, visible in the Bible and probably inherited from the pre-Israelite traditions.⁵⁹ An examination of the distribution and use of gold in the Exodus tabernacle suggests that the Israelites viewed YHWH as the divine producer of gold and that this attribute was probably correlated with his supreme status as god of gods (as in Deut 10:17).⁶⁰

As YHWH, the divine gold-maker is a singular deity. In producing the substance from which the gods are made, he is not the procreator of the gods, as a supreme deity may be. He instead is as distanced from them as an artisan is from the artefacts s/he produces. This singularity has a crucial consequence. A father of the gods may easily be approached through his children, these latter carrying his attributes. But nothing similar exists for a divine gold-maker. Exactly as the artefacts cannot retrace the identity, substance, shape and reality of the artisan producing them, the divine gold-maker cannot be approached through the worship of his productions. If exclusiveness of the cult of YHWH antedates the Israelite religion, such considerations concerning his transcendent status of god of gods and gold-maker probably motivated it.

The present study suggests that the communication with YHWH is materialized by the gold-copper alloy. This feature is especially interesting in

Practices in the Ancient World and Beyond (ed. Carrie A. Murray; Albany: State University of New York Press, 2016), 49-64.

⁵⁹ Nissim Amzallag, "Copper Metallurgy: A Hidden Fundament of the Theology of Ancient Israel?" *SJOT* 27 (2013), 155–180.

⁶⁰ Amzallag, "Beyond Prestige and Magnificence," 309-311. This status is probably related to the pre-Israelite worship of YHWH among metalworkers (the Qenites) and the metallurgical background of his cult. See Joseph Blenkinsopp, "The Midianite-Kenite Hypothesis revisited and the Origin of Judah," *JSOT* 33 (2008), 140-144; Marleen E. Mondriaan, *The Rise of Yahwism – The Role of Marginalized Groups* (PhD Thesis, University of Pretoria, 2010), 307-371; Nissim Amzallag, "YHWH: the Canaanite God of Metallurgy?" *JSOT* 33 (2009), 387–404; Amzallag, "Hidden Fundament"; Nissim Amzallag, "Why is the Cain Genealogy (Gen 4:17-24) Integrated into the Book of Genesis?" *ANES* 55 (2018), 23-50.

light of the importance of copper in the tabernacle. Copper is the dominant metal in the courtyard of the tabernacle, the area accessible to the Israelites, and therefore rooted in the terrestrial reality. Among the copper artefacts, the copper-coated altar is of central importance, a feature revealed by its grading as holy of holies (Ex 40:10), exactly as the inner part of the sanctuary is associated with the divine presence and mainly constituted of pure gold (Ex 26:33-34). The parallel is confirmed by the copper-coated altar's function as a revealer of divine presence (kabod-YHWH), as in Lev 9: 6.

Furnace symbolism is associated with the copper-coated altar, which results from the intense fire associated with the combustion of burnt-offerings (up to 1000 C), close to the conditions of copper melting. This interpretation promotes a parallel between copper produced in a terrestrial furnace (symbolized by the copper altar in the courtyard) and gold produced in the divine domain (symbolized by the pure-gold altar in the tabernacle).⁶¹ From this perspective, copper-gold alloys express the interference between the two metallurgies, human and divine. The production of copper, the terrestrial counterpart of gold, becomes an act of *imitatio dei*, a parallel activity by which YHWH may be approached. This view may justify the status of a man-god interface devoted to gold-copper alloy in the tabernacle. It may also justify why a cancellation of the project of residence of YHWH among the Israelites (the tabernacle) is immediately followed by the de-alloying of the golden calf and by the request for the Israelite to strip off their jewellery (gold-copper alloys) (Ex 33:5).

I CONCLUSIONS

This study opened with the difficulty of interpreting the golden calf as a foreign cult/idolatry. Its affinities with the divine emissary of YHWH make the prohibition of his cult and the request of exclusiveness enigmatic. Furthermore, the parallel importance of gold in the golden calf episode and in the tabernacle suggested that the insertion of this story in the midst of the whole section devoted to the tabernacle is not incidental. It is no longer a literary artifice introduced for generating a tension around the creation of the tabernacle, emphasizing the prohibition of idolatry. Otherwise, the narrative examining the impunity of the Israelites after the transgression (up to the repression organized by Moses) becomes counterproductive.

The identification of a de-alloying process in Ex 32:20 reveals that metallurgy in general, and gold in particular, is an integrative part of the request of exclusiveness attached to the cult of YHWH. The parallel between the gold-copper alloy in the tabernacle and the god-man relationship confirms this point. It reveals that copper metallurgy is a main way of accessing the mysteries of YHWH, a feature symbolized by the production of copper-gold alloys. But the

⁶¹ For further developments of this parallel symbolism of the copper and gold altar of the tabernacle, see Amzallag, "*Beyond Prestige and Magnificence*".

story of the golden calf reveals that gold-copper alloy may be attached also to the divine emissaries that ensure communication between YHWH and the earth, a situation which substitutes to the direct relationship between YHWH and the Israelites (= the tabernacle project). Consequently, the significance of the transgression of the golden calf is much more subtle than it appears at first. Instead of merely opposing the worship of YHWH with that of other deities, the author of Exodus 32-33 points to a problem: the incompatibility of the indirect worship of YHWH through a secondary deity (represented by the golden calf) with the claim of closeness to YHWH and of his residence among the Israelites. This situation of direct relationship does not avoid the existence of intermediaries, Moses being their archetype. However, unlike gods, these emissaries remain mortals, that is, of restricted period of action, powers and authority.

This incompatibility between the YHWH-man relationship and the promotion of a divine intermediate ensuring their communication is materialized by the consequences of the golden calf episode: the destruction of the tables of the covenant (Ex 32:19), the de-alloying of gold (Ex 32:20), and the request addressed to the Israelites to remove their jewellery (gold-copper alloy) and to leave Mount Horeb (Ex 33:5-6).

The metallurgical symbolism in the tabernacle combined with the story of the golden calf reveals that the metallurgical background of pre-Israelite Yahwism survived well in ancient Israel, at least in some influential circles. This invites us to approach metallurgy not simply as a source of metaphors for illustrating divine features, but rather as a privileged means for understanding the singularities of YHWH. Metals and their theological significance reflect YHWH's transcendent nature, the exclusiveness of his cult, and even the theological novelties introduced in Israel, including the transformation of this esoteric tradition attached to a small group of metalworkers into the public religion of a whole people.

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