

From snout to tail

Exploring the Greek sacrificial animal
from the literary, epigraphical,
iconographical, archaeological,
and zooarchaeological evidence

Edited by Jan-Mathieu Carbon
& Gunnel Ekroth

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ABSTRACT

Animal sacrifice fundamentally informed how the ancient Greeks defined themselves, their relation to the divine, and the structure of their society. Adopting an explicitly cross-disciplinary perspective, the present volume explores the practical execution and complex meaning of animal sacrifice within ancient Greek religion (c. 1000 BC–AD 200).

The objective is twofold. First, to clarify in detail the use and meaning of body parts of the animal within sacrificial ritual. This involves a comprehensive study of ancient Greek terminology in texts and inscriptions, representations on pottery and reliefs, and animal bones found in sanctuaries. Second, to encourage the use and integration of the full spectrum of ancient evidence in the exploration of Greek sacrificial rituals, which is a prerequisite for understanding the complex use and meaning of Greek animal sacrifice.

Twelve contributions by experts on the literary, epigraphical, iconographical, archaeological and zooarchaeological evidence for Greek animal sacrifice explore the treatment of legs, including feet and hoofs, tails, horns; heads, including tongues, brains, ears and snouts; internal organs; blood; as well as the handling of the entire body by burning it whole. Three further contributions address Hittite, Israelite and Etruscan animal sacrifice respectively, providing important contextualization for Greek ritual practices.

Keywords: Greek animal sacrifice, anatomy, division, butchery, body part, multi-disciplinary approaches, zooarchaeology, iconography, epigraphy, texts, cross-cultural comparisons

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11. Blood and ritual killing: Exploring intuitive models

Abstract

Greek *sphagia* (“blood victims”) are the objects of a category of ritual killing which emphasizes the shedding of blood. Using cognitive theory, I will attempt to identify the conceptual models that allow practitioners of ritual *sphage* to infer that their methods are efficacious. In the agentive model of ritual *sphage*, blood is used to facilitate interaction or reciprocity with an intentional agent (typically a god or hero). In the mechanistic model, blood is used to achieve a result automatically, through the Laws of Similarity and/or Contact (that is, through sympathetic magic). Dual activation of agentive and mechanistic models occurred in Greek rituals of *sphage* on the battle-line, in oaths, and in some types of purification. In Greek culture, mechanistic models were intuitive and implicit, with the partial exception of oaths, where the mechanistic analogy was sometimes stated as part of the ritual. These two factors (dual activation and the implicitness of mechanistic models) have made it more difficult for scholars to recognize the extensive role of sympathetic magic in rituals of *sphage*, and the structural similarities among rituals. Battle-line *sphagia*, oath *sphagia*, and purificatory bisections, for example, all rely on magical action per the Law of Similarity.

Keywords: Greek animal sacrifice, agentive model, mechanistic model, Law of Similarity, Law of Contact, blood, ritual killing (*sphage*), blood victims (*sphagia*), battle-sacrifice, oath-sacrifice, purification

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In this paper I will explore Greek rituals involving *sphagia* (“blood victims”), animals killed in order to shed blood.¹ I will attempt to identify the conceptual models that allow

practitioners of rituals of *sphage* to infer that their methods are efficacious. I am applying a cognitive approach, according to which certain ritual techniques are predicated on a substrate of intuitive beliefs, those which are held without conscious reflection. My analysis is drawn from dual process theory, which distinguishes between intuitive cognition (fast, unconscious, effortless) and reflective cognition (slow, conscious, effortful).² Intuitive beliefs may be naturally-developing results of our interaction with the environment (as in the belief that objects thrown in the air will fall down again) or they may be culturally learned, yet so ingrained as to require no conscious effort (as in the inference that the doorbell ringing means someone is at the door). The origin of still other intuitive beliefs is somewhere in between. Children must be taught to wash, yet parents do not need to explain how water acts to remove dirt. This inference on the child’s part results spontaneously from direct perception, and becomes part of the intuitive repertoire. Interestingly, however, it seems to be a common inference worldwide that invisible forms of dirt or contamination can also be removed by washing. In this case, the need to “wash off” the pollution is taught, but perceptual confirmation is lacking. Why do people believe that such measures are effective? The answer cannot be simply that they accept an arbitrary social convention, for then we ought to find cultures cleansing pollution by any number of arbitrary methods, such as standing perfectly still for an hour. Instead, removing invisible contaminants with water is plausible and satisfying because the analogy with the removal of visible dirt has intuitive force.

¹ On the concept and vocabulary of *sphagia* see, in addition to the sources below, Rudhardt 1992, 272–288. I use the phrase “rituals of *sphage*” to denote an etic category of rituals yielding *sphagia*. In this paper, use of the word “victim” implies only the object of ritual killing, not the object of a sacrificial action or offering.

² Intuitive beliefs held unconsciously can be made explicit; such beliefs often seem glaringly obvious (e.g., upsetting a glass will cause liquid contents to spill). On dual process theory, intuitive cognition and the intuitive/reflective distinction, see e.g. Sperber 1997; Gilovich *et al.* 2002; Kahneman 2011; Evans & Stanovich 2013. Discussion in relation to Greek religion: Larson 2016, 11–14.

James G. Frazer collected instances of beliefs like this, which are plausible and satisfying despite their lack of validity. Despite the methodological flaws of *The golden bough*, no one has since given as cogent a description of the intuitive beliefs that make magic seem plausible to people around the world and in every age. Frazer posited two so-called “laws” of sympathetic magic.³ The first is the Law of Similarity, that like produces like, and that one can bring about a desired effect by representing it, either in concrete fashion or with words. Sticking a pin into a doll in order to attack a person is a familiar example. The second law is the Law of Contact or Contagion, that things which have been in contact remain connected. Thus the operation of sticking a pin in a doll will be more efficacious if the doll contains hair from the person being attacked. A growing body of research in cognitive psychology suggests that Similarity and Contact operate extraculturally as biases in normal human cognition, including that of educated adults.⁴ Cognitive biases operate intuitively and often below the level of conscious awareness, so that relationships of analogy and contagion are often but not necessarily always recognized by practitioners. Sympathetic magic could therefore function in ancient rituals without being classified as part of the emic categories of *goeteia*, *mageia*, or the like. Indeed, as I will argue, sympathetic magic could function to increase ritual efficacy without being recognized at all. People felt strongly that it worked, but they did not know why.

Sympathetic magic corresponds to one of the two fundamental cognitive models of causation. The first is that events happen through impersonal mechanistic processes or laws. Water runs downhill automatically, without the need for a person/agent to make this happen. Frazer’s magical “laws” fall into this category. The second fundamental model of causal thinking is intentional agency: an event happens because someone (an agent) forms an intention and acts on it. As we will see, representations of *sphagia* may draw on one or (more often) both of these models, but it is important to distinguish the agentive and non-agentive (= impersonal mechanistic) models because there seems to be ample evidence that they are generated separately in the mind, using different cognitive tools.⁵ The logical conflict which results when these models are deployed simultaneously was rarely recognized by an-

cients, though it has caused many problems for modern interpreters. For example, anthropologists struggle to explain how people can simultaneously attribute an illness to both natural causes (non-agentive) and witchcraft (agentive), without perceiving the logical conflict as a problem.⁶ In the rest of the paper, I will apply the agentive/mechanistic distinction as a heuristic tool for understanding the intuitive bases of a variety of blood rituals. First I will provide some examples of the two causal models in relation to blood victims, and then I will discuss each of the examples in more detail.

In the agentive model of ritual *sphage*, blood is used to facilitate interaction or reciprocity with an intentional agent. This model of causation draws upon our systems for social cognition, especially theory of mind, that is, the attribution of beliefs, desires and intentions to entities in the environment.⁷ In these cases the ritual actors are attempting to discern and/or influence the mental state of a superhuman agent. Examples include offerings (such as when blood is given to a god, hero, the dead, the rivers or the winds), and divination (such as when signs indicating divine disposition are observed from the flow of blood or other features of *sphagia*).

In the mechanistic model of ritual *sphage*, blood is used to achieve a result automatically, through the Laws of Similarity and/or Contact. In this model of causation, ritual efficacy does not depend on the mental state of another intentional agent, but on the expectation that impersonal forces function in the environment according to fixed laws or patterns. Examples include the performative uses of blood on the battle-line and in oath rituals, and the use of blood as an instrument in purification and aversion rituals.⁸

Blood in offerings

The use of blood in offerings has been ably addressed by Gunnel Ekroth in her 2002 book, so I will merely summarize and make a few additional observations.⁹ In standard alimentary *thysia*, a small amount of blood was splashed or poured on the

³ Frazer 1922, 11. Discussion: Larson 2016, 132–135, 167, n. 23–24. Frankfurter (2019, 672–673) is hardly alone in warning against the term (and concept) of sympathetic magic due to its Frazerian origins, but it is possible, in my view at least, to glean what is useful from Frazer (the demonstration of extracultural patterns of human thought) while discarding what is not (his flawed model of cultural evolution).

⁴ Magical laws as elements of normal cognition: Rozin *et al.* 1986; 1990; Nemeroff & Rozin 2000; Gilovich & Savitsky 2002; Rozin & Nemeroff 2002. Discussion: Larson 2016, 132–142.

⁵ Generated separately: e.g. Gergely *et al.* 1995; Csibra *et al.* 1999; Woodward *et al.* 2001; Blakemore *et al.* 2003.

⁶ According to Banerjee & Bloom (2014, 289 with further bibliography on 292), simultaneous attribution of logically conflicting causal models is very common.

⁷ For introductions to theory of mind see Baron-Cohen 1997; Wellman 2014.

⁸ As used here, “performative” applies to rituals of *sphage* in which killing or bloodshed itself is the focus of the ritual for analogical purposes. The killing of piglets in purificatory contexts, for example, is usually done in order to obtain blood for tracing a circuit or sprinkling on a person. The piglet’s death is incidental; the animal serves as a convenient and economical source of blood. In performative ritual contexts, however, the animal’s death is analogically linked to the similar fate of an oathbreaker or enemy.

⁹ Ekroth 2002, 135–136, 171–177, 242–276 and 305–306, with discussion of oaths and pre-battle rituals.

Table 1. Degrees of intuitive directness in methods for delivering blood to a recipient.

Most indirect	Intermediate	Most direct
Collecting in vessel, then pouring onto altar, into pit, on tomb surface, etc.	Slaughtering so that blood flows straight onto altar, pit, tomb. Collecting blood, then pouring through tube into tomb	Slaughtering into water, where the river, spring, etc. is the recipient (e.g. σφαγιάζεσθαι εἰς ποταμόν, Xen. <i>Anab.</i> 4.3.17)

altar, while the majority was processed for consumption, often as blood sausage. This form of sacrifice can be contrasted with those (signaled by the verbs *sphazein*, *entemnein* and sometimes *enagizein*) in which most or all of the blood was offered to a superhuman being, typically one with some connection to the underworld and/or perceived as hostile. These rites might or might not include an alimentary element, depending on the recipient and context.

When blood is used as an offering, it is manipulated in concrete ways which facilitate contact with a superhuman recipient. Altars are a standard point of contact, but a pit is better for recipients originating underground, while pouring blood directly onto, or better yet, into a tomb yields the intuition that the dead occupant will be aware of the offering. We also observe that it is preferable for blood to flow directly from the animal's body to the point of reception, although practical considerations, such as the size of the animal, or the desire to collect blood for consumption, may interfere with this goal. Methods for delivering blood to a recipient can be classified based on the degree of intuitive directness (Table 1).

The recipients of blood offerings were a varied group. There is evidence that the dead were represented as dry and thirsty, and thus especially receptive to libations, including blood.¹⁰ Both propitiatory and mechanistic rituals of *sphage* are attested as techniques for dealing with harmful winds, which seem to have been classed as hostile spirits.¹¹ Why rivers and other bodies of water should receive *sphagia* is less clear since they are neither explicitly associated with the dead nor overtly hostile. Yet rivers are a special case with respect to the mental model of offering: unlike most gods, a river deity was present in tangible form and could receive the blood directly and visibly, as the liquids mingled. Like the throwing of coins or other gifts into water, the concreteness of this procedure was intuitively satisfying. Most of our evidence for *sphagia* offered to rivers comes from literary descriptions of armies on campaign, which suggest that crossing a river was represented as an occasion requiring both propitiation of the god and

some sign of his consent. As a result, the divinatory aspect of such *sphagia* was especially important.¹² But there is also epigraphic evidence of an annual rite for Acheloios in Hellenistic Mykonos, where three animals, a full grown sheep and two lambs, were slaughtered at the altar, while an additional eight lambs had their throats cut so that the blood would flow into the water. This suggests a double procedure, of propitiatory *sphagia* considered desirable for rivers (the eight lambs), and alimentary sacrifice to fit the festival context (the sheep and two lambs).¹³

These varied uses of blood are all predicated on the inference of a mind at the other end of the ritual. As Fred Naiden has emphasized, the efficacy of any form of offering depends on whether the recipient accepts it, something which can never be assumed in Greek culture, even if the rites are properly performed.¹⁴ Correct performance may be a necessary condition for success, but it is not sufficient. In situations where the mechanistic model is activated, blood is shed performatively or used as an instrument to achieve various ends, and efficacy depends on whether the ritual is properly performed. Even if there is a mind at the other end of a magical procedure, its mental state will be irrelevant to success unless an agentive model is also activated. As we will see, Greek rituals of *sphage* quite often combine agentive and mechanistic models, although the latter normally remain implicit (that is, Greek practitioners would readily associate gods and ritual killing of animals, but the operation of the Laws of Contact and Similarity in ritual killing was only rarely acknowledged). Despite the difficulty of teasing these elements apart in rituals, the ef-

¹⁰ On the dryness and thirstiness of the dead, see Larson 2016, 253 with n. 13.

¹¹ On winds: Xen. *An.* 4.5.4 (the seer *sphagiazetai* to the wind that is freezing the men and it abates); Paus. 2.12.1 (the priest at Titane *thuei* at an altar but also “performs secret rites into four *bothroi* to soothe the wildness of the winds), 2.34.2 (at Methana they circumambulate the vineyards with a bisected rooster to avert the wind Lips).

¹² Jameson (2014, 105) writes, “The *sphagia* at rivers were, in effect, a more limited and concentrated version of normal sacrifice, dictated by the circumstances, the aims and the nature of the supernatural force addressed.” Divinatory element: Aesch. *Sept.* 377–379 (the *mantis* does not allow Tydeus to ford the Ismenos because the *sphagia* are not *kala*), Hdt. 6.76.1–2 (Kleomenes slaughtered [*sphagiazesthai*] for the Erasinios but did not receive favorable signs). Cf. Eur. *Herakl.* 822, where the *mantis* release *ourion phonon* from the cattle's necks.

¹³ Mykonos: *LSCG* 96, lines 35–37, c. 200 BC, a decree concerning the cult calendar on the occasion of synoecism. Cf. Jameson (2014, 104), who takes (as I do) *eis potamon* to mean *sphattetai eis potamon*, not Sokolowski's “jeté dans le fleuve.”

¹⁴ Rejection of offerings: Naiden 2013, 131–182 and 331–333. Although acceptance could never be assumed, certain rituals were set up to favor a positive outcome. For example, tails placed on the sacrificial fire predictably curl upwards, giving a “good sign”: van Straten 1995, 118–133 and 190–191 and see now Morton in this volume, Chapter 2.

fort is methodologically justified, because cognitively speaking, nothing prevents the simultaneous activation of agentive and non-agentive models.

Battle-line *sphagia*: offerings and performative killing

Sphagia at the point of battle have generated debate because they draw on both agentive and mechanistic models. Michael Jameson devoted an article to the subject of Archaic and Classical sacrifice before battle, in which he distinguished between the preliminary *hieria* in camp or on the road, which followed the model of *thysia* with divination, and the hastier *sphagia* which happened when armies were within sight of each other and on the point of engagement.¹⁵ At such moments, Jameson doubts that a *mantis* (a seer) had time to extract and examine the viscera for signs. Instead, he suggests two quicker methods: observation of the way the animal falls when its throat is cut, and observation of the way the blood spurts or flows onto the earth. He favors the latter, because representations of this procedure show the victim firmly held by the *mantis* or warrior as he prepares to pierce its throat.¹⁶ William Kendrick Pritchett strongly plays down the divinatory aspect of the battle-line *sphagia*, arguing that they were strictly propitiatory, for once at the battle line, generals were committed to action regardless of the omens. His exclusion of divination cannot stand, however, for there are unambiguous examples in Xenophon and Herodotus of signs read from battle-line *sphagia*.¹⁷

The Spartans normally designated Artemis Agrotera as the recipient of their battle-line *sphagia*, but there is a significant silence on the matter of recipients in most non-Spartan cases, and Artemis is “the only sure historical example of a specific

addressee.”¹⁸ Whereas the process of divination does not depend on knowing the specific divine source of a given sign, the act of presenting an offering normally does assume a specific recipient, or at the very least, a general category of recipients, such as “the underworld gods,” or “all the gods”. Thus, the lack of stated recipients has raised the question of whether these ritual killings were mentally represented as offerings.

An alternative or complementary interpretation is that this bloodletting can be understood as a performative, magical operation, in which the piercing of the victim’s throat inaugurates and enacts the bloodshed which the army hopes its enemies will suffer. The use of a sword rather than a knife to pierce the throat, as shown in a 5th-century BC kylix in Cleveland, supports this interpretation.¹⁹ The moment of sacrificial slaughter is rarely depicted on vases, but according to Folkert van Straten, extant kill scenes with animals seem restricted to battle-line *sphagia*, suggesting that in this ritual, the killing itself was the focus of interest.²⁰ Likewise it was desirable that the assembled armies see the ritual performed, or at least view the carcasses.²¹ Dual causal models might explain the tendency to employ two types of ritual killing: *hieria* were for offerings and divination, while performative *sphagia* worked mechanistically and must be activated immediately before the battle for full effect. But because the inference of magical efficacy was intuitive and implicit rather than explicitly stated, this ritual action easily lent itself to divinatory and propitiatory interpretation by participants and by authors describing the ritual.²²

¹⁵ Jameson 2014, 98–106 (originally published as Jameson 1991); followed by Flower 2008, 159–166. As Jameson notes, there is terminological fuzziness in that the broader term *hieria* is sometimes used to refer to *sphagia*. On diachronic changes in practice, see Parker 2000, 301–304.

¹⁶ Quicker methods: Jameson 2014, 107–108; cf. Dillon 2008, 244–245 (on spurting blood). Discussion of the victim’s position during slaughter: Ekroth 2002, 271–274.

¹⁷ Pritchett (1971, 109–110) distinguishes between the *hieria*, which he correctly describes as divinatory, and *sphagia*, which he limits to a supplicatory and propitiatory function. He does not acknowledge that signs indicating that the *sphagia* are *kala* are a form of divination. Parker (2000, 299) follows Jameson, distinguishing between “consultative sacrifice” and *sphagia* on the point of battle, while acknowledging that the latter also provided omens. Unambiguous: e.g. Hdt. 9.61 (*esphagiazonto* on the point of battle with Mardonios but the *sphagia* were not *chresta*); Xen. An. 6.5.21 (distinguishing between good signs derived from *hieria*, *oionoi* and *sphagia*), 1.8.15 (both the *hieria* and the *sphagia* are *kala*). See also Aesch. Sept. 230–231 (pairing *sphagia* and *chresteria*).

¹⁸ Sure historical example: Jameson 2014, 112. Dillon (2008, 248–251) argues for Artemis as the regular recipient.

¹⁹ Inauguration of bloodshed: Jameson 2014, 115 with fig. 6.1, 122–123. For the Cleveland kylix (Cleveland, Museum of Art 26.242; BAPD 9003650 c. 490–480 BC), see Ekroth 2002, 272, fig. 11. Parker (2000, 308–309) sees the animal *sphagia* on the point of battle as symbolically representing both the enemy (“them”) and a substitute for one of “us”, a “precautionary self-maiming”. I suspect that the latter mental model would be activated only in the special case where the victim is a human member of the in-group. Additionally, from a cognitive perspective, dual use of one mechanistic model (here, Similarity) for the same causal event could be problematic; this question requires further study. On substitution and human sacrifice see most recently Parker 2013.

²⁰ Moment of kill: van Straten 1995, 103–113; Dillon 2008, 240–242; Jameson 2014, 102, n. 11.

²¹ See the *sphagia*: Thuc. (6.69.2) describes the *manteis* “bringing forward” (*proupheron*) the *sphagia* before the hoplites charge; the scholiast on this passage says that the ritual was performed in front of the armies.

²² Authors describing the ritual: e.g. in Eur. Heracl. 399–400 the *sphagia* are for “the appropriate gods” (*hois chre*). Szymanski (1908, 89–90) proposed that the divinatory function of the *thysia* made in camp was transferred onto the *sphagia*: “*Quod si recte suspicor, ratio divinandi in hierois usitata ad sphagia paulatim est translata.*”

Oath *sphagia*: are they ever offerings?

Dual causal models for *sphagia* were also activated in Greek oath rituals. Let us examine the mechanistic element first. Performative bloodshed and contact with blood or bloodied flesh were used for oaths of special solemnity.²³ A technique common in both the Greek world and the Near East involved the mutilation of an animal. The oath-takers cut up the unfortunate creature, explicitly or (more often) implicitly calling down the same fate on themselves if they broke the oath.²⁴ Chris Faraone and Irene Berti note that the Greek rituals were characterized by physical contact with the animal carcass or some part of it.²⁵ Contact with the carcass strengthened perceptions of efficacy, for it created an intuitively satisfying tie between the oath-taker and the slaughtered animal. Blood was sometimes used in similar fashion; Aeschylus and Xenophon both describe “slaughtering into a shield” and the dipping of hands or weapons into the collected blood. Perhaps bloodying the *inside* of a shield prophesied similar gore on the interior of the shields of the forsworn, while contact with the blood tied all who swore to this fate. The blood may then have been poured onto the ground with the implication that the blood of the forsworn would similarly be spilled.²⁶

²³ For oaths see Cole 1996; Sommerstein & Bayliss 2013; Sommerstein & Torrance 2014 (esp. 138 on magic and “increased binding power”).

²⁴ Cut up: the pieces of the oath victim were called *tomia*: Dem. 23.67–68; Cole 1996, 233; Georgoudi 2018, 190–195. The standard terminology when animals were involved was “to cut oaths” (*horkia temnein*); see Sommerstein & Bayliss 2013, 150–152. Faraone (1993, 65–72) collects and discusses examples of sympathetic magic in Greek oath rituals. Konstantinidou (2014, 22–23 with n. 68) identifies only three Greek instances in which the analogy is made explicit: the Thera colonists’ ritual (*ML* 5.23–51), Hom. *Il.* 3.297–301 (discussed below), and a Molossian ritual related by a paroemiographer (*Prov. Coisl.* 57 Gaisford [1836]) in which oathbreakers are to be cut down and chopped up like the sacrificial ox, and their blood to be poured out like the wine from the vessels. Additional examples are present in the Near Eastern material, where magical analogies are more often explicit: Faraone 1993, 62–63 and 65–66.

²⁵ Contact: Faraone 1993, 66; Berti 2006, 194–195. The case of Demaratos (Hdt. 6.67–68; Torrance 2014, 4 and 140, n. 31), who asked his mother about his paternity while forcing her to hold *splanchna* from a sacrifice to Zeus Herkeios, is different from a normal oath ritual in that the mother does not voluntarily self-curse; the son instead attempts to coerce her to speak truth by imposing oath-like conditions. See also Bednarek in this volume, *Chapter 9*.

²⁶ Aesch. *Sept.* 42–48; Xen. *An.* 2.2.8–9; cf. Eur. *Supp.* 1195–1202. Pouring on the ground: Faraone 1993, 67, n. 31. This activation of Similarity (the analogy between wine and the blood of the perjurer poured out) may also account for the ubiquity of libations as a ritual activity in truces and treaties, and the metonymic use of *spondai* as a term for such agreements: Konstantinidou 2014, 22 with n. 65; Sommerstein & Bayliss 2013, 242. The sinking of iron in the sea represents a different analogy, of permanence: on leaving Phokaia, the Phokaians (Hdt. 1.165) swore never to return before the iron emerged again. A similar action is attested without explicit analogy in the oath of the Delian League (Arist. [*Ath. Pol.*] 23.5 and Plut. *Vit. Arist.* 25.1).

Most scholars agree that this use of animals is performative (i.e. magical), without tackling the question of whether the animals are also to be regarded as offerings. In fact, explicit language of offering is rare in attested oath rituals and the procedures involving performative acts typically did not include apportioning a part to the god, nor consumption by participants.²⁷ On the other hand, formal Greek oaths virtually always involved an explicit appeal to gods as witnesses and/or guarantors: should a participant perjure himself, the gods would perceive the crime (hence the common invocation of Helios and Ge, whose ubiquity makes them effective witnesses). Superhuman beings such as Zeus or the Erinyes might also be assigned the role of punishers.²⁸ Thus, an agentive causal model (divine scrutiny of behavior, and punishment through divine action) was supplemented in certain solemn cases with a mechanistic model (punishment through the Laws of Contact and Similarity). Although the Greeks themselves may have believed that “only fear of the gods” guaranteed that oaths would be kept, the Laws of Contact and Similarity must also have operated powerfully to deter oathbreaking.²⁹

Iliad Book 3 takes the unusual step of representing animals as offerings in an oath ritual, yet supplements the killing with a clearly magical procedure of libation using the Law of Similarity.³⁰ When the idea of a single combat between Menelaus and Paris is raised, Menelaus calls for the following preparations:

²⁷ Performative: Faraone (1993, 66) notes that oath victims fall into the category of *sphagia* which are “never cooked, shared in fellowship or offered up as gifts to the gods.” Burkert (1985, 252) is more cautious, saying that the matter of eating oath victims “was disputed”. Sommerstein & Bayliss (2013, 152) call oath rituals examples of “sympathetic magic”, but also speak of “oath offerings” (154). Torrance (2014, 148–149 and 151) acknowledges the role of sympathetic magic in oath slaughter and libations, without addressing whether the animals are offerings, but she states (139 with n. 22) that the carcasses were discarded or burned. Cole (1996, 230–233) emphasizes analogy and correspondence in oath ritual, but also points to the variety in procedures.

²⁸ Zeus or Erinyes: discussion and sources in Konstantinidou 2014, 6–19. Witnessing transgression and administering punishment are to be regarded as distinct roles, although one god or set of gods may function in both. We should also take into account the possibility that the simple self-curse (“If I am lying, may I perish”) functions linguistically as an instance of the Law of Similarity, since belief in the magical power of spoken words to bring about what they represent is well-attested. Thus every conditional self-curse, even in the absence of a ritual killing or the pouring out of liquids, may depend fundamentally upon Similarity, with divine observation and punishment a complementary but cognitively distinct development. Contrast Sommerstein & Torrance (2014, 1–2) who write that a superhuman power is always invoked either explicitly or implicitly (“When not explicitly specified, the identity of the guarantor power will be either implied in the context or given by the culture”).

²⁹ “Only fear of the gods”: Burkert 1985, 252.

³⁰ For the oath in *Iliad* Book 3 see Kirk 1985, 274–311 *passim*; Faraone 1993, 73, n. 54; Kitts 2003 (identifying the Homeric ritual as “metaphorical transformation”); Berti 2006, 183–193.

οἴσετε ἄρν', ἕτερον λευκόν, ἑτέρην δὲ μέλαιναν,
 Γῇ τε καὶ Ἥελίῳ: Διὶ δ' ἡμεῖς οἴσομεν ἄλλον:
 105 ἄξετε δὲ Πριάμοιο βῖην, ὄφρ' ὄρκια τάμνη
 αὐτός, ἐπεὶ οἱ παῖδες ὑπερφίαλοι καὶ ἄπιστοι,
 μή τις ὑπερβασίῃ Διὸς ὄρκια δηλήσεται.
 (Hom. *Il.* 3.103–107)

You bring lambs, one a white male and the other a
 black female,
 For Ge and Helios; for Zeus we shall bring another.
 And lead mighty Priam here, that he may cut oaths
 Himself, since his sons are arrogant and faithless,
 Lest anyone by overstepping do harm to the oaths of
 Zeus.³¹

Each side contributes at least one animal; the sex and (in the case of Ge and Helios) the color of the animals are chosen to correspond to recipient deities, a procedure common when animals are killed as offerings. In historically attested oaths, by contrast, norms often specified that the animals must be male, full-grown, and uncastrated. As Susan Cole notes, this technique increased efficacy by strengthening the analogy between the oath victims and the adult men swearing the oaths. Although women could participate in private oath rituals, the vast majority of oath rituals were public, used to bind men when taking office, serving on juries, testifying in court, and in other civic contexts.³²

In *Iliad* 3.268–274, Agamemnon cuts hairs from the lambs and has them distributed to the participants, bringing them all into physical contact with the oath victims. He then prays (3.276–280) to a group of gods overseeing the oath: Father Zeus who rules from Ida, Helios who beholds and hears all things, the rivers and the earth (*gaia*), and “those beneath who exact the price from the dead, whoever swears an oath falsely.” The list no longer corresponds exactly to the oath victims.³³ After stating the terms of the oath, Agamemnon cuts the lambs’ throats and lays them on the ground (*epi chthonos*) gasping for breath and losing spirit (*thumos*). The men take wine in the cups and pour it out, praying to Zeus and the other immortal gods (3.298–301) that whoever first goes against

the oaths should have their brains poured on the ground (*chamadis*) like the wine, both theirs and their children’s, and that their wives should be enslaved to others. Priam then states that he does not wish to watch the combat, places at least two of the dead lambs in his chariot (3.310–312), and drives off.

Homer’s description initially states that the animals are “for” Helios, Ge and Zeus, but as in most oath slaughter, no part of the animal is set aside or burned on an altar for the gods. According to Geoffrey Kirk, attention is drawn to the moment of death, using terms (*aspairein*, *thumou deuomenos*) elsewhere applied to the last breaths of defeated warriors.³⁴ Why Priam takes possession of the lambs’ carcasses is unclear (in *Iliad* 19.266–268, the herald throws the boar used as the oath victim into the sea), but he may intend to display them to the people inside the walls before disposing of them.³⁵ Once the lambs are dead, wine is poured out. The functioning of the Law of Similarity in the explicit analogy between spilled wine and spilled brains is unmistakable (as is the element of horror), yet even here, the agentive model is activated with a prayer to “Zeus and the other immortal gods” to fulfill the conditions of the oath. In general, the Homeric poet emphasizes the agency of the gods in enforcing oaths, and Zeus’ special role in the process.

Another variation of oath ritual is used when oaths are sworn at altars, especially when the terms of the oath are pertinent to the deity’s functional domains or personal interests (such as oaths regarding paternity sworn at the altar of Zeus Phratrios, or oaths of purity sworn by Dionysos’ Gerarai at his altar in Athens). In such cases, we have not to do with *sphagia*, but with *hieria*, slaughtered according to the norms of alimentary *thysia*. The ritual is carried out “at the altar” (*pros toi bo-moi*) and those swearing must place a hand on the altar, on the god’s victim, or both. In these cases there is no performative mutilation, and (if I am correct) the touching occurs before the slaughter. The mental model is agentive, except for the physical contact with the god’s property, which intensifies the oath-swearer’s accountability to the god.³⁶

³¹ My translation.

³² Cole 1996, 231–232 (male, full-grown, and uncastrated animals), 237–240 (on women and oaths). For the relative paucity of female oath-takers see also Fletcher 2014, 156.

³³ By analogy with the list of gods in Agamemnon’s oath at Hom. *Il.* 19.258–260, the underworld punishers are likely the Erinyes. Both groups of oath-gods encompass the sky, the earth and the underworld, and perhaps the three lambs of Book 3 can be interpreted as corresponding to these realms; in Book 19, however, the oath victim is a single boar. Burkert (1985, 251) notes the similarity between these lists of oath-guarantors and Near Eastern lists which encompass the cosmos by including rivers, springs, clouds, mountains, etc.

³⁴ So Berti 2006, 187: “An apparent aporia has been seen in the fact that although verses 103–104 explicitly state that the three lambs were destined for Zeus, Helios and Ge, it looks as if the animals were not really offered to the gods.” Last breaths: Kirk 1985, 307–308.

³⁵ Display: Kirk (1985, 310–311) lists the possible explanations for Priam’s action.

³⁶ In Athenian phratry ritual, there seem to have been no *sphagia*, but an alimentary *thysia* with the touching of the altar or victim of the guarantor god, Zeus Phratrios: Andoc. 1.126; Isac. 7.16; Dem. 43.82 (the latter two with touching of *hierion*); Sommerstein & Bayliss 2013, 10–13. In the oath of adjudication of youths into the phratry of the Demotionidai (*IG* II² 1237), the oath-takers swore while touching the altar of Zeus Phratrios (lines 75–76), but again no oath victim is mentioned, although there was sacrifice to Zeus. The touching emphasizes the god’s authority over the procedure and participants (thus, ballots are also to be taken “from the altar”, lines 17–18, 29 and 84). The key element in this case is

Purification and mental models

USE OF DUAL METHODS (AGENTIVE AND MECHANISTIC)

The final category I will discuss is purification using blood. Several scholars have noted that in killings for purification, it is the norm for no divine recipient to be specified, but the situation is more complex than this.³⁷ Ritual killing for purification may be performed in order to obtain blood which can be used as an ingredient or implement (mechanistic), or it may be conducted in order to placate and soothe deities after pollution has occurred (agentive). These two methods may be combined in one ritual, but the animal used as an offering is normally different from the animal used for the mechanistic procedure. The Kyrene cathartic law contains several examples of situations where pollution has occurred in a sanctuary, thus offending the deity. For example, someone may offer an animal species which is unacceptable to the god. The remedy is for the offender to wash the altar and himself, “purify the shrine” by an unspecified, probably bloodless method, and then to “sacrifice” (*thyein*) a full grown animal as penalty.³⁸ Both a mechanistic method and an offering are required in order to achieve purification, before normative alimentary *thysia* can resume. In Apollonius of Rhodes’ description of the purification of Jason and Medea from murder (*Argon.* 4.685–717), there is some overlap of mental models, for Apollonius uses the phrase *reze thuopoliēn* (“performed sacrifice”) when describing the piglet killed to provide blood, yet no recipient is identified.³⁹ Medea uses this blood to sprinkle the offenders, then pours libations intended to soothe Zeus Katharsios. After the offscourings are removed, additional offerings of cakes are burned to stave off the Furies and make Zeus kindly. In both of these cases, the purification process is incomplete

contact with the god or his property, as when moderns swear with a hand on a holy book. Oath of the Gerarai at the altar of Dionysos: Dem. 59.78.
³⁷ No divine recipient: Healey 1964, 158 (“a sacrifice without a deity”); Parker 1983, 139, n. 142, 393; Ekroth 2002, 251; Clinton 2005, 179. My argument corresponds to that of Georgoudi (2001–2002; 2017; 2018, 178–180), who urges greater caution in speaking of “cathartic sacrifice” and distinguishes carefully between cathartic and sacrificial procedures. Because of the association of the term “sacrifice” with offering, I prefer “ritual killing” for instances of slaughter with no evident recipient.

³⁸ Probably bloodless: *LSS* 115 (*SEG* 9, 72): see A lines 26–31 and 33–42, and B lines 2–8. “Purify the shrine” is probably a bloodless method, because “purify with blood” seems to be a category of its own (lines A 33–42). The “preliminary sacrifice” (*prothyein*) and “penalty” (*zamia*) of these lines refer to offerings made specifically for purification from *agos*, the anger of a superhuman agent. Compare the culturally hybrid Marmarini ritual norm (Decourt & Tziaphalias 2015, B lines 1–6: double sacrifice of fowls).

³⁹ On this passage and the anomaly in terms of sacrificial norms see Georgoudi 2017, 121.

without an offering of atonement or placation, because both involve some degree of *agos*, offence to a superhuman being. In cases where no *agos* has occurred, pollution can usually be cleansed or avoided by magical methods alone.

CIRCUMAMBULATION AND THE QUESTION OF “ABSORPTION”

Next, let us turn to the purifying uses of piglet blood. I will suggest that we need to distinguish more clearly between two forms of mechanistic use which are often lumped together, circumambulation with a piglet or other animal, and sprinkling of blood directly onto an individual.⁴⁰ These two techniques and the mental models supporting them are significantly different, as are the circumstances leading to their use. Before every meeting of the council and assembly in Classical Athens, a piglet was killed and its corpse was carried around the perimeter of the meeting space by an official called a *peristiarchos*. To take a seat on the Pnyx was to “go inside the purification”. The etymology shows that the word was coined to describe a similar operation of circling a hearth, *histia*. The prefix *peri-* is consistently used in the vocabulary for this action: the verbs include *perikathairo*, *periphero* and *peristeicho*, while *peristia* are synonymous with *katharsia*, the materials of purification.⁴¹

The emphasis on circumambulation and turning around shows that the tracing of a circuit is the primary action here, and that the technique inscribes a boundary separating the pure from the impure. Scholars who have discussed this ritual tend to assume that the operation is performed in order to cleanse impurities within the inscribed area.⁴² But as Plato notes in the *Sophist* (227c–d), demarcating a line between good and bad is the key concept when cutting a ritual boundary. Therefore a circle thus inscribed could also form a boundary keeping bad things out of a place which has not yet been polluted. The existing scholarly model envisions the assembly or theatre or temple as place which builds up impurity the way a body builds up dirt, and thus requires regular cleansing. But what if the boundary is established prophylactically in certain cases, in order to keep *out* malevolent and impure influences? We can compare a ritual attested for Methana (Paus. 2.34.2), where two men cut a rooster in half and run around the vine-

⁴⁰ Cole (2004, 47, n. 90) evidently classifies the piglet blood used on Jason and Medea in Ap. Rhod. *Argon.* 4.700 and 4.709 with circumambulation methods.

⁴¹ Vocabulary of “purifying around”: Parker 1983, 21–22; Cole 2004, 47–49. “Go inside the purification”: Ar. *Ach.* 44. *Peristiarchos*: Ar. *Ecll.* 128–130; Istros *FGrH* 334, F 16 with additional sources in Jacoby’s commentary.

⁴² To cleanse the ritual area: e.g. Parker 1983, 372 (“assemblies ... were regularly cleansed in this way”); Cole 2004, 47–50 (“ritual repair”). For Georgoudi (2017, 131), the assembly space is “now ‘cleansed’ and therefore ‘protected’”.

yards in opposite directions, each carrying a half, in order to protect the vines from the destructive force of the wind called Lips.⁴³ We can also compare the story that in 370 or 369 BC the Argive democracy massacred more than a thousand of its own citizens, prompting the Athenians to have a *katharsion* carried around their own assembly. Did the very announcement of such deeds create a pollution in the assembly space which required cleansing, or did the news trigger the protective measure of creating a boundary?⁴⁴ In the more self-conscious practice of circuit-cutting by magicians, circles are used as defensive boundaries against hostile spirits, as in Lucian's (fictional) description of a Persian *magos* circumambulating Menippos "to protect me from being harmed by ghosts".⁴⁵

As Cole has pointed out, individuals could use a related method to purify themselves. On Kos, the priest of Zeus Polieus who became polluted was to "cut around himself" (*peritamestho*) with a male piglet.⁴⁶ Presumably the Hellanodikai and the Sixteen Women at Elis used this technique when they cleansed themselves (*apokathairontai*) before rituals at Olympia with "a piglet suitable for purification (*pros katharmon*), and with water."⁴⁷ The blood technique is often paired with the action of "sprinkling about oneself" (*perirrhaïnesthai*) performed with water. Where water is used, it is difficult to tell whether the dominant mental model is that of washing or boundary-tracing. Unfortunately we do not know the ex-

act gesture used in *perirrhaïnesthai*. Depending on the situation, perhaps water was sprinkled around oneself, onto the body directly, or even outward. (In addition to *perirrhaïnesthai*, vessels called *aporrhantēria* are also attested, as is the verb *aporrhhaïnesthai*.)⁴⁸

Returning to the tracing of a circuit of blood, what was the mental model (or models) supporting its efficacy? Explicit discussions of how the ritual worked are lacking in our sources, an omission which (in my view) points to a strong intuitive component.⁴⁹ It seems clear that blood was required in situations where water would not be efficacious enough on its own, that is, for higher intensity jobs.⁵⁰ We might speculate that blood was represented as a more powerful substance because of its associations with life and death. Most scholarly discussions speak of a process of "absorption" by which the piglet carcass or the blood itself attracted the impurities. Such discussions of "absorption" implicitly invoke the Law of Similarity in that the piglet or its blood is impure and thus attracts impurity. I find this unsatisfying as an intuitive model for a number of reasons. First and foremost, I am not convinced that the Greeks regularly represented blood as an intrinsically impure substance, given its ubiquitous use on altars and for

⁴³ Compare O. Paoletti (*ThesCRA* II, 29) who describes circumambulation as having "*una valenza catartica ma anche magica e apotropaica*", but in the latter case he has in mind Paus. 2.34.2 rather than the procedure in the assembly.

⁴⁴ Argos: Isoc. 5.52 and Diod. Sic. 15.57–58 for the context; Plut. *Prae. ger. reip.* 814b for the Athenian reaction. Another oft-cited comparison is the actions of the Mantineans after the emissaries from Kynaiṭha visited their city on the way to Sparta (Polyb. 4.21). The Kynaiṭhans had recently committed a massacre, and all cities on their path through Arcadia ordered them to depart, including the Mantineans, who took additional steps. They "both performed a purification (*katharmon epoiesanto*) and carried blood victims (*sphagia*) around the city in a circuit and around the entire territory." In this case, the guilty men were actually in proximity to the city, thus causing pollution by contact, but a need to protect the city from the avengers pursuing them may have been felt.

⁴⁵ *Magos*: Lucian, *Necyomantia* 7. Similarly, the title page of the 1616 edition of Marlowe's *Doctor Faustus* shows the magician within a magic circle, being menaced from outside by a demon.

⁴⁶ Kos and male piglet: *IG XII.4* 332, A line 18 (= *LSCG* 156, A line 14); Cole 2004, 137–140. Compare the case of a priestess of Demeter on Kos: *IG XII.4* 72, lines 28–30 (*LSCG* 154, A lines 28–30); Paul 2013, 78. If polluted she was to cut around herself with a female piglet (text restored on the basis of *IG XII.4* 332, A line 18), then use something (presumably water) from a golden vessel and something from a *prospermeia* (grain vessel?). As restored, these substances are sprinkled round (*perirana(n)to*). Clinton (2005, 169) interprets *peritamestho* in the priest's case as a passive rather than a middle.

⁴⁷ Olympia: Paus. 5.16.8. At Kyrene, the man subject to a tithe must "purify himself with blood" (33–75) as part of the procedure; I am presuming that he did not sprinkle himself with blood, but cut a circle around himself with the dripping piglet.

⁴⁸ Cole (2004, 46, n. 81, and 140) opts for the mental model of "drawing a circle with pure water" (tracing a boundary) rather than that of washing. Ginouvès (1962, 299–310) states (308) that it is not merely a question of washing the hands but "*s'asperger le corps*" as an equivalent to literal bathing, presumably per the Law of Similarity. Support for a mental model of washing comes from the sparse evidence (Ginouvès 1962, 308, n. 7) that *louterion* could be used as a synonym for *perirrhanterion*. On the other hand, "washing/bathing" and "sprinkling" are regularly distinct actions (e.g. Pl. *Cra.* 405b; Theophr. *Char.* 16.2). For *aporrhantēria*, *aporrhaino* and related forms see e.g. Eur. *Ion* 435; *IG II²* 1425, line 306 (gold *aporrhantēria* with figures); *LSCG* 129, line 18 (Anaphe); *LSCG* 151, B lines 23–24 (Kos); *LSCG* 156, A lines 15–16 (Kos).

⁴⁹ Cole (2004, 139–140) cites Pl. *Soph.* 227a for the model of the homeopathic, absorbent sponge vs the allopathic cathartic drug, but the terminology is not this precise. *Spoggistike* (sponging) and *pharmakoposia* (drinking of medicine) are mentioned side by side, but these seem to refer more to exterior vs internal cleansing than absorbency vs expulsion. Immediately prior, gymnastics and medicine, which "discriminate" impurities within the body, are contrasted to the bath-keeper's art (*balaneutike*), which deals with externals. Like most anthropologists, scholars of the Greek and Roman world typically view the lack of emic explanations for many ritual acts as the result of unquestioning adherence to social convention (when explanations are given, they often take aetiologically form and appeal to tradition). Cognitive approaches to ritual, however, trace its characteristic features to intuitive processes. See Larson 2016, 187–211.

⁵⁰ "High intensity" and "low intensity" rituals: see Ekroth (2002, 325–330), who classifies battle-line *sphagia*, oath ritual and "purification in connection with singular events" as high intensity. She also posits a category of "modified rituals" of intermediate intensity, including routine purification.

Ritual action	Victim represents:	Direction of analogy
Battle-line <i>sphagia</i>	Enemy	Victim to enemy
Oath <i>sphagia</i>	Self (conditionally)	Victim to self
Purificatory mutilation/bisection	Self (as substitute)	Self to victim

Table 2. *The Law of Similarity in performative slaughter of animals.*

food.⁵¹ Nor were pigs generally regarded as impure.⁵² Second, there is a substantial conceptual leap from circuit-cutting to absorption. Closer to true absorption models are the purification methods which involve direct physical contact, such as smearing with mud or bran, or rubbing the affected person with a puppy.⁵³ Mud and bran mash have concrete absorptive properties and could function like a poultice, while dogs were the closest in the Greek bestiary to an impure animal.⁵⁴ Tracing a circuit may constitute a form of “contact,” linking the animal or its blood with whatever is surrounded, but whether contact and absorption can be equated is another question.

We should also be cautious about accepting “like *absorbs* like” as a new law of sympathetic magic, until and unless it can be supported by experimental research and ethnographic data. Certainly in some cases, “like attracts like” seems to be a legitimate subset of “like produces like” or “effects resemble causes” (Frazer’s Law of Similarity). An example is the use of

ersatz coins or wallets as amulets in order to attract money. This principle is usually applied positively, however, whereas noxious or harmful substances or objects are not typically used in magic to attract more of the same, but to drive them away per the Law of Similarity.⁵⁵

MAGICAL SUBSTITUTION

Roman ritual provides clues as to how the manipulation of *sphagia* could result in the aversion of bad things through substitution and the Law of Similarity. Appian (*B. Civ.* 5.10.96) describes a Roman ritual in which *katharsia* (the bodies of animals slaughtered for use in purification) were carried in skiffs three times around a fleet with prayers to turn the bad omens (*apaisia*) against the animals; then part of the carcasses were cast into the sea and part burned. In this case, the animals are explicitly regarded as substitutes for the sailors in the fleet. A misfortune either current or believed to be looming could be turned aside onto a slain animal, which by the Law of Similarity took the place of the original target(s).⁵⁶ As in oath and battle-line *sphagia*, there is performative killing, but in purificatory mutilation, the expected evil is deflected to the animal (*Table 2*).

In Appian’s example, a circuit was traced, but this does not seem to be a necessary element of the ritual; rather, the essential element is some form of contact linking the real and substitute targets, just as contact links the animal carcass and the person swearing an oath in an oath ritual. Valerius Flaccus (*Argon.* 3.439–443) describes a similar ritual in which the seer Idmon carries the animal’s entrails among the Argonauts, who need to be protected from the anger of the dead. Idmon walks three times *through* the group, touching the animal’s entrails to their armor and clothing; he then disposes of the remains partly in the sea and partly by burning. In the Greek and Near Eastern worlds, a close parallel is the practice of bisecting per-

⁵¹ Parker (1983, 371–372) and Cole (2004, 140) take the position that blood is defiling and impure. Vernant (1980, 129) speaks of blood as an ambiguous substance with regard to pollution.

⁵² The new ritual norm from Marmarini (Decourt & Tziaphalias 2015 = *CGRN* 225) cites blood as a polluting substance (B line 81), but the procedures are heavily influenced by Semitic customs. Pigs were not ritually impure among the Greeks in a global sense, although like other species, they might be banned from certain altars.

⁵³ “Puppification” in Greek contexts is attested in Plut. *Quaest. Rom.* 68, 280b–c (“And for Hekate they bring out puppies along with the other purifying materials and they rub around [*perimattousi*] with puppies those who need purification and they call this kind of cleansing puppy-surrounding [*periskulakismos*]”; note the agentive involvement of Hekate in a ritual with strong mechanistic elements). In Hittite contexts, puppies were held to and moved over the bodies of sick persons while incantations were spoken stating that the puppy was licking each affected part (Collins 1990, 214–216). Such a cure seems to rely on the belief in the dog’s curative ability (as in the cult of Asklepios) and the animal is represented as ingesting the illness by licking it off the patient. Other rituals (Collins 1990, 216–218) involve transferring evils from the king and queen to a puppy which is waved over them. In one procedure there is an invocation to let the puppy carry off the evil; the puppy is then taken away and killed. This ritual parallels those in Greek and Roman culture (described below) which use animals as substitute victims per the Law of Similarity. In a second type of procedure, the puppy is waved over the king and queen, and they spit into its mouth, transferring their ills to the animal, which is then killed. The puppy receives the illness through licking, being spat upon, or being identified explicitly as the substitute. Thus the puppy neither “absorbs” ills in the way a sponge might, nor through a principle of “like attracts like”. I thank Alice Mouton for alerting me to the Hittite puppy rituals and the Collins article.

⁵⁴ Dogs: Parker 1983, 357–358; contra the impurity of the dog see Georgoudi 2018, 200.

⁵⁵ My thinking on the question of absorption and its relation to sympathetic magic was stimulated by Cole (2004, 139–141). Although I disagree with her conclusions, her discussion is a laudable attempt to identify mental models supporting the varied processes of purification.

⁵⁶ Likewise, one of the explanations Servius Auctus (*ad Aen.* 2.140) gives for the Ludi Tauri is that they were instituted on account of a plague, “so that the public pollution might be turned against the animal victims” (*ut lues publica in has hostias verteretur*). It is not clear whether this ritual involved some form of circuit.

Table 3. Comparison of instrumental uses of piglet blood.

Circumambulation/cutting around oneself with piglet	Sprinkling piglet blood on an offender, then washing
Magical separation/barrier	Magical staining/washing; piglet blood represents victim's blood
May be routine and recurrent; not necessarily for <i>agos</i>	Not routine; normally involves an <i>agos</i>
May cleanse existing pollution or be prophylactic/aversive (?)	Always occurs in response to existing pollution
Can be performed on oneself	Must be performed by someone else

sons and/or animals and marching between the two halves.⁵⁷ This was often done in order to purify large groups of people, especially armies. Passing between the bisected halves is analogous to being encircled or enclosed, and (I suggest) activates the Law of Contact, while the horrific fate of the victim identifies it as the designated substitute target of disease, misfortune, etc. In such cases, the dominant mental model seems to be not absorption through attraction of like to like, but substitution of one victim for another through the Law of Similarity.⁵⁸

What then of the Greek examples of purification with piglets? The work of the *peristiarchos* seems to be distinct from the Roman cases and the bisections in three ways. First, it is usually routine maintenance rather than a response to an expected or current crisis; second, the cutting of a circuit is essential (for creation of a demarcating barrier) rather than incidental (one of several ways to achieve contact); and third, there seems to be a focus on blood as an instrument (particularly its use in leaving physical traces of the circuit). The Roman and bisection examples, in contrast, focus on the animal's entrails and/or its mutilation, in a fashion similar to oath ritual.⁵⁹ In crisis situations where imminent harm was expected,

however, or where the ritual was intended to avert the anger of a superhuman being, cutting a circuit with an animal carcass may have converged on the substitution model.⁶⁰

CLEANSING BLOOD GUILT

Now let us compare circumambulation and cutting a circuit around oneself with the cleansing of blood guilt and other pollutions using a piglet (Table 3).⁶¹ Whereas the latter typically involves some form of *agos*, the former need not. Whereas the latter is always conducted after pollution has been incurred, the former may (I suggest) be prophylactic. Purification by washing the homicide with pig blood is typically performed by someone else, while *peritamesthai* can be performed on oneself.⁶² Finally, the blood is manipulated differently. Rather than being dripped in a circle, it is sprinkled directly onto the individual to be purified of blood guilt, and then washed off. The Law of Similarity seems to be in effect. By creating a visible stain on a killer and washing it off, one washes away the invisible stain too. Washing with water is the key concept in an Archaic Athenian ritual prescription for suppliants: "Then after you and the other *splanchna*-tasters have washed yourselves up, take water and cleanse (the individual). Wash the blood off the individual being cleansed (*tou kathairomenou*) and, after that (*meta tauta*), having removed/taken away the dirty water/residue of the cleansing (*anakinesas to aponimma*), pour it out in the same place." Here the tasting of entrails

⁵⁷ Greek examples of bisection in Macedonia and Boeotia, using a dog: Parker 1983, 22. Most of the numerous Hittite rituals involving bisecting of animals simultaneously employ a gate of hawthorn to remove ills: "(As) the billy-goat passes by you and you pull hair off it ... in the same way pull off this offendant evil, impurity ..." (Collins 1990, 218–222). Severed animals (often including puppies) are set on each side of the gate to serve as substitutes to which the misfortunes may cling. Masson (1950, 20 and 21) describes the area between the bisected parts as a "*zone d'absorption*". Parker (1983, 21–22) speaks of the unifying effect such rituals have on the group.

⁵⁸ On rituals of bisection see now Georgoudi 2018. While dismissing notions of "magic" as too vague and imprecise (194–195 and 200), she suggests that the shed blood of the bisected people or animals has a purifying effect as in other Greek rituals, creating "*une sorte de 'porte', de zone d'absorption*" (202, citing Masson 1950).

⁵⁹ Focus on blood: Clinton (2005, 170–174) cites Attic and Delian inscriptions recording the cost of wood for burning of purificatory piglets. The piglets are not holocaust offerings, because the cost of wood for their disposal is separate from the cost of wood used on altar fires. Clinton suggests that the efficacious element is the circuit itself (with "absorption"), followed by immolation, rather than the dripping blood. That the blood was insufficient to leave a continuous trail does not detract from its importance, for according to the Law of Similarity, the semblance of a thing functioned like the thing itself; the cognitive faculty of pattern completion would also have operated in such cases, as in children's games

of connect-the-dots. For pattern completion, see Larson 2016, 75, 112, n. 30.

⁶⁰ Here I have in mind the Koan custom of using of a piglet of the same sex as a priest or priestess who has become polluted. See the discussion of the priest of Zeus Polieus above with note 46.

⁶¹ Blood guilt and other pollutions: In Hippoc. *Morb. sacr.* 1.46 G (p. 358 Littré) purification with blood is performed by specialists on a variety of sufferers "like those who have some miasma, or those with blood guilt (*alastoras*), or those enchanted by people, or those who have done something *anosion*." For the procedure, see Parker 1983, 370–374.

⁶² Performed by someone else: The myth of Ixion is pertinent. The first man to shed kindred blood (Pind. *Pyth.* 2.31–32), he was unable to find anyone on earth willing to purify him and finally had to turn to Zeus (Aesch. *Eum.* 717–718, Diod. Sic. 4.69.4). I thank Fred Naiden for suggesting this example. In *CGRN* 13 B (Selinous c. 500–450 BCE), the homicide to be purified from *elasteroi* performs the operations himself with materials supplied by a host; however, there is no mention of cleansing with pig blood. Rather, a piglet is sacrificed to Zeus.

indicates an alimentary sacrifice, but the blood washed off the suppliant presumably comes from a separate animal, most likely a piglet.⁶³

Literary sources on the topic of blood guilt, however, focus on the paradox of washing blood with blood, rather than on the concrete procedure of washing the bloodstain with water and disposing of the offscourings. Robert Parker suggests that this homeopathic interpretation is a “secondary development.”⁶⁴ From a cognitive perspective, washing a stain away with blood is less intuitive than washing it with water. The Law of Similarity, however, entails a likeness between cause and effect. Just as Telephos could only be healed by rust from the spear which wounded him, so perhaps the malady of blood pollution could only be cured by a second application of the “(human) victim’s blood”, represented by the piglet blood. The piglet is not slaughtered as a direct substitute for either the murderer or the human victim; instead, it simply supplies blood which can be used to recreate the stain. Both water and blood would have been essential in the ritual, with the concepts of “washing” and Similarity as the dominant mental models, rather than “absorption.”⁶⁵ In all cases of murder and blood guilt, however, it is necessary to keep in view the po-

tential agentive role of angry and avenging spirits, which may require placation through various types of offerings.

To conclude, *sphagia* were deployed in ritual both as offerings to deities and mechanistically, through the laws of sympathetic magic. Dual activation of agentive and mechanistic models occurred in rituals before battle, in oaths, and in some types of purification. In Greek culture, mechanistic models were intuitive and implicit, with the partial exception of oaths, where the mechanistic analogy was sometimes stated as part of the ritual. Rituals which activated implicit mechanistic models of efficacy were easily “infringed upon” by the agentive model of offering, which is normally explicit. Literary accounts reflect this bias, and poets may have encouraged it for theological reasons. Finally, the co-existence of mental models often resulted in dual acts of animal slaughter, or a ritual killing in order to obtain blood plus a non-animal offering, corresponding to the two models of causation.

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⁶³ Ath. 9.410a–b (= Dorotheus *FGrH* 356, F 1), a cathartic regulation of the Eupatridai. An alternative interpretation is that one animal supplies both *splanchna* for tasting and blood for sprinkling the suppliant, but this would be unexpected given the usual aversion to consuming *sphagia*. See the comments of Parker (1983, 283, n. 11). Georgoudi (2017, 132–135) plausibly suggests that the participle *splanchnuontes* refers generically to the fellows who share in the sacrifices of the Eupatrid *genos*, rather than to a sacrifice in this purification ritual.

⁶⁴ Literary sources: e.g. Herakleitos B5 (Diels-Kranz); Aesch. *Eum.* 448–450; Eur. *IT* 1222–1225. Secondary: Parker 1983, 373. The myth of Telephos and Achilles offers support for a folk belief in “like cures like”, because Telephos is cured by the spear which wounded him. However, the operation of magical laws in this case is more complex than a simple “like cures like”. The Law of Contact is implicated, in that Achilles’ attack through the medium of the spear creates a magical bond between the two men (cf. “the hair of the dog that bit one” cures the wound); furthermore, the detail that rust from the spear was scraped onto the wound (Apollod. *Epit.* 3.20) appears to involve the Law of Similarity and recreate the cause (rusty powder = blood). In Apollod. *Bibl.* 1.9.12, Iphiklos is cured of impotence by drinking rust from the bloody gelding knife that scared him; here the rust recreates the shed blood that caused the trauma. In Hippocratic medicine, this folk belief is developed into the far more reflective and less intuitive doctrine of homeopathy, that “like cures like” by establishing harmony, either within the body or between the body and the environment. Medical “homeopathy” and “allopathy” are different facets of the same principle, depending on whether one is treating a symptom or its cause. Nikolova (1999, 105) gives the example of a feverish patient treated with heat. At the symptomatic level, this appears to be homeopathy (like cures like), but it is applied because the cause is excessive cold in the body (opposite cures opposite). On medical homeopathy and allopathy see also Kosak 2004, 115–121.

⁶⁵ For “absorption” as the mental model here, note the comment of Parker (1983, 372, n. 14): “There is no explicit Greek testimony for the idea that the evil passes into the animal.” For explicit cases, he cites Valerius Flaccus *Argon.* 3.439–443, App. *B. Civ.* 5.96.401, and Servius Auctus *ad*

Aen. 2.140, but as I have argued above, the principal mental model in these Roman instances is substitution rather than absorption.

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