RESEARCH ARTICLE

Spectacular Translucence: The Games in Glass

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Glass cups bearing labeled images of charioteers and gladiators were popular between AD 50 and 80 and have been found throughout the empire's northwestern quadrant, including Italy. Fashioned in the recently invented technique of mold-blowing, their words and images were doubly legible on the translucent support: the names and contestants appear on both sides of the glass wall. A phenomenological approach to the cups reveals an overlooked phase in the representation of the empire's leading sports, as well as new ways of reading and watching the games in glass. The cups' sensory allure complicates their traditional categorization as souvenirs and vehicles of imperial propaganda.

Introduction

In one of the funniest banquet scenes in Latin literature, the nouveau-riche Trimalchio holds forth on tableware. Extolling his own collection of silver vessels, he offers mistaken readings of the myths they portray, then notes in passing that he also has depictions of the fights of Hermeros and Petraites (Petronius, *Satyricon* 50–52). Scholars have long sought such gladiatorial cups in the archaeological record: although Greek myths abound on the empire's sumptuous silver wares, gladiators are conspicuously absent from this luxurious medium. They do, however, appear on colorful glass vessels (**Figure 1**). Dating roughly between AD 50 and 80, this mold-blown series also features the empire's other sports stars, charioteers (**Figure 2**). Trimalchio's author may have had this contemporary glassware in mind when he imagined gladiatorial cups in silver, a mistake in materials to complement his character's garbling of myth.

Mold-blowing technology, then recently invented, allowed words and images to be shaped directly in glass. Translucence, a visual phenomenon that fascinated the elder Pliny (*Natural History*, 37.63–64), permitted the resulting forms to be read from either side of the vessel wall (**Figure 3A**). This visual effect combined with the cup's encircling shape to create a dynamic new medium. Mold-blown wares prioritized either text (naming the artist or exhorting the reader) or figures (often mythological) in their decoration, though both could be omitted in favor of patterning, which was far more common (Price 1991; Whitehouse 2001: 13–68). The only designs that joined textual commentary and figural imagery were the ones featuring the stars of the games.

Far more than compendia of popular names and familiar icons, the cups offered a novel experience of the empire's premier spectacles. They did so throughout Italy and the northwestern provinces, where hundreds of fragmentary vessels have been recorded. In all of these regions, the cups formed part of a larger mold-blown corpus that also included small jars with similar spectacle scenes, as well as a few cups with athletes boxing or wrestling. The cups with chariot racing and gladiatorial matches are found in the greatest numbers and will be the focus here. Although no comprehensive catalogue currently exists, regional publications have consistently typologized the cups' fragments into four principal mold groups (Foy and Fontaine 2010). Seven well-preserved examples anchor this ever-expanding corpus and are often included in exhibitions and publications focused on Roman glass or sports (**Table 1**, with references). Yet the cups mark an overlooked turning point in the design of text and in the marshaling of imagery in dynamic, multi-dimensional simulations. These features can only be appreciated through the kind of phenomenological analysis (Van Dyke 2014) typically reserved for Roman houses, gardens, and cities (Clarke 1991; Bergmann 2002; 2010; Favro and

Figure 1: One side of the Montagnole Cup, showing three gladiators, one advancing with shield, one recumbent, and another advancing with shield, and the names Gamus, Merops, and Calamus above them. Mold-blown glass, 8.0 cm h. × 9.0 cm diam., c. AD 50–80, Montagnole, France. Metropolitan Museum of Art, New York, 81.10.245. Photograph designated public domain, provided by the Metropolitan Museum of Art.

Figure 2: One side of the Colchester Cup, showing a charioteer beneath an obelisk, with the phrase '*Cresces Av*' above. Mold-blown glass, 8.4 cm h. × 7.7 cm diam., c. AD 50–80, Colchester, England. British Museum, London, 1870,0224.3. Photograph designated creative commons (CC BY-NC-SA 4.0), provided by the British Museum.

Johanson 2010). In advancing a phenomenology of Roman glass, this paper also aims to bring new evidence to bear on studies of material texts, sensory experiences, and provincial relations.

'Material text' is the term now used in literary analyses that emphasize the physicality of documents in the pre-print world (Meier et al. 2015). This scholarly endeavor takes into account the semantics and cultural associations of materials, their phenomenal modes of representation (as when gilt letters denote and reflect light simultaneously), and the impact of physical format on conceptual organization. Among the textual media of the pre-print world, glass has been largely overlooked (though Meredith (2015) on cage cups is

Figure 3: Six views of the Couvin Cup. **A)** Oblique view with charioteers centered. **B)** Base of the cup. **C)** A charioteer surges into motion between the turning posts and the lap counter, with the phrase 'Pyrameva' above. **D)** A charioteer between the lap counter and the next set of turning posts, with the phrase 'Eutycheva' above. **E)** A charioteer between the turning posts and the obelisk, with the restored phrase 'Ieraxva' above. **F)** A charioteer holding the victor's wreath while his horses stand, between the obelisk and the turning posts, with the phrase 'Olympeva' above. Mold-blown glass, 6.5 cm h. × 8.5 cm diam., c. AD 50–80, Couvin, Belgium. Musée Archéologique, Collection ANS, Namur, A04246. All photographs by Jean-Luc Elias, © KIK-IRPA, Brussels, reproduced with permission.

an important exception). Considering the spectacle cups as textual objects allows new insights into the production of writing through mold-blowing technology, the process of reading translucent letters, and the composition of popular accounts of sports for functional objects.

In considering how the vessels themselves were experienced, as well as how the cups' designs responded to the experience of the games, the essay also aims to contribute to current archaeological work on the senses. As Hamilakis (2013) and Betts (2017) note, attentiveness to sensory experience is not a theory per se. It entails a methodology that acknowledges both the universality of human sensory physiology and the particular cultural and personal frames that give meaning to what is perceived. My analysis of the cups therefore begins with my own sensory encounters with them, then turns to archaeological, artistic, and literary evidence to explore how residents of the ancient Mediterranean might have comprehended their own. The lived experience of these beguiling artifacts is difficult to perceive in the tightly framed frontal views required for objective archaeological illustration. In order to enliven the reader's encounter with the cups, the essay unites all of the key surviving examples with photographic illustrations that are, for the first time, exclusively in color and taken from angles that better replicate ancient sightlines of use (**Table 1**, e.g. **Figure 3A**).

Table 1: Principal corpus of well-preserved spectacle cups.

Findspot	Figures	Mold Group	Color	Dimensions	Repository	Reference
Couvin, Belgium	3, 4D	A (charioteers)	Light amber	6.5 cm h. × 8.5 cm diam.	Musée Archéologique, Collection ANS, Namur, A04246	Follman-Schulz 1998: 155, cat. no. 7
Mainz, Germany	4B, 5	A (charioteers)	Amber	5.7 cm h × 7.7 cm diam.	Corning Museum of Glass, 66.1.34	Whitehouse 2001: 59–60, cat. no. 530
Schönecken, Germany	4C, 6	A (charioteers)	Blueish-green	6.5 cm h. × 8.5 cm diam.	Rheinisches Landesmuseum, Trier, 21008	Goethert-Polaschek 1977: 43, cat. no. 129
Trouville-en-Caux, France	4C, 7	A (charioteers)	Yellowish-green	6.8 cm h. × 8.2 cm diam.	Musée des Antiquités, Rouen, 70.2.1 (VA 245)	Sennequier et al. 1998: 116–117, cat. no. 9
Colchester, England	2, 4A	B (charioteers)	Yellowish-green	8.4 cm h. × 7.7 cm diam.	British Museum, London, 1870,0224.3	RIB II.2, 2419.1
Chavagnes-en-Paillers, France	8B, 9	C (gladiators)	Yellowish-green	7.1 cm h. × 7.5 cm diam.	Corning Museum of Glass, 54.1.84	Whitehouse 2001: 60–62, cat. no. 132
Montagnole, France	1, 8A	D (gladiators)	Yellowish-green	8.0 cm h. × 9.0 cm diam.	Metropolitan Museum, NY, 81.10.245	Sennequier et al. 1998: 133, cat. no. 78

This paper focuses on the cups in part because their broad distribution includes both Rome and the provinces. The integration of these two realms of scholarly inquiry remains an urgent imperative for Roman archaeology. The cups count among the mobile artifacts inviting a more global approach that transcends the empire's many internal boundaries, both administrative and cultural (Pitts and Versluys 2015). To that end, addressing the vessels' sensory aspects calls into question common explanations for their popularity, namely that they were souvenirs of Roman games (Künzl and Koeppel 2002: 20–22) and that they promoted Romanization abroad by heralding the capital's preferred entertainments (Foy and Fontaine 2010: 93). A new account of their texts, images, and contexts will propose an alternative story premised on the cups' sensory appeal.

Word Games

In their design, materiality, and subject matter, the spectacle cups offered an unprecedented reading experience. Never before had text been arrayed in a continuous band around the top of a glass vessel. Scholarly conventions make this experiment easy to overlook. Transcriptions move the words from one materiality (monochrome, curved, translucent glass) to another (black ink on flat white paper or black and white pixels on a flat electronic screen). Such transfers facilitate the retrieval of information, but do not necessarily inspire reflection on how Roman eyes read.

Continuous bands of text were in fact rare on vessels of all media in this era. Among the few examples are votive inscriptions encircling silver objects destined for deities (von Falkenstein-Wirth 2011: 214–230; Lapatin 2014: 58–63). Other vessels with text reveal dramatically different designs. The mold-blown glassware that preceded the spectacle cups displayed pithy claims of authorship (e.g. 'Ennion made this') or wishes ('let the buyer be remembered') in centrally framed panels that could be perceived in a single glimpse (Lightfoot 2014: 27–32). On vessels of terracotta or silver, maker's names, figural labels, and other phrases occasionally appeared within scenes. Two silver cups from Boscoreale, for instance, placed maxims and names of Greek philosophers and playwrights amidst skeletons (Baratte 1986: 65–67). Only rarely did names appear amidst chariot races or gladiatorial matches on terracotta cups (the series from Calahorra, Spain, is exceptional in this regard; Jiménez Sánchez 2003). In contrast to all of these precedents, the glass spectacle cups separate multiple protagonists and their respective names into separate bands. This arrangement allowed the text to be read in dialogue with the imagery below, but also independently in a continuous sequence.

Reading a spectacle cup in full required rotating it in a complete circle, while constantly adjusting the tilt to achieve a legible interplay of light and shadow within the translucent letters protruding from the exterior surface. An empty or half-full cup lifted perpendicular to the gaze was optimal for this mode of reading. Alternately, when the cup was brought toward the lips and tilted forward for sipping, the words on the far wall came prominently into view, because they could be seen through the glass supporting them. This and other oblique angles juxtaposed text running in the accustomed direction (left to right) on the near wall, with text flowing in reverse (right to left) on the far one (**Figure 3A**). The cups offered those imbibing an unusual experience, that of seeing the backs of letters, perhaps for the first time.

Optical access to the cups' texts did not guarantee comprehension. Given the difficulty of documenting which residents of the Roman Empire could read, recent research has explored a plurality of literacies, while also segregating acts of reading and writing (Baird and Taylor 2010: 9–11). Informal texts, such as graffiti, with their diversity of handwritings, wide-ranging subjects (from gladiatorial scores to puns on the *Aeneid*), and varied locations (from the basilica to the brothel) suggest a textual culture with multiple registers of access. The cups participated in this textual culture and contributed another point of entry. Moreover, like many textual objects, they arose as commodities in a market with many options, here in competition with glassware, tableware, and spectacle paraphernalia. The cups' words added distinction and value not just by complicating design and increasing the labor necessary for production, but also by serving as potential bearers of meaning in relation to popular imagery, even if their precise significance remained unrealized for some viewers.

Producing text with mold-blowing technology was not easy. Although no molds have yet been found (Van den Dries 2007), seams indicate that most cups emerged from a three-part matrix: two upper molds formed the walls, while a third shaped the base. The molds captured the text in reverse (so as to yield a positive image of it on the exterior of the finished product) and also divided the sequence of names in two. As we shall see, carving the letters deeply enough to capture blown glass was challenging, as was arranging varied names evenly across two molds.
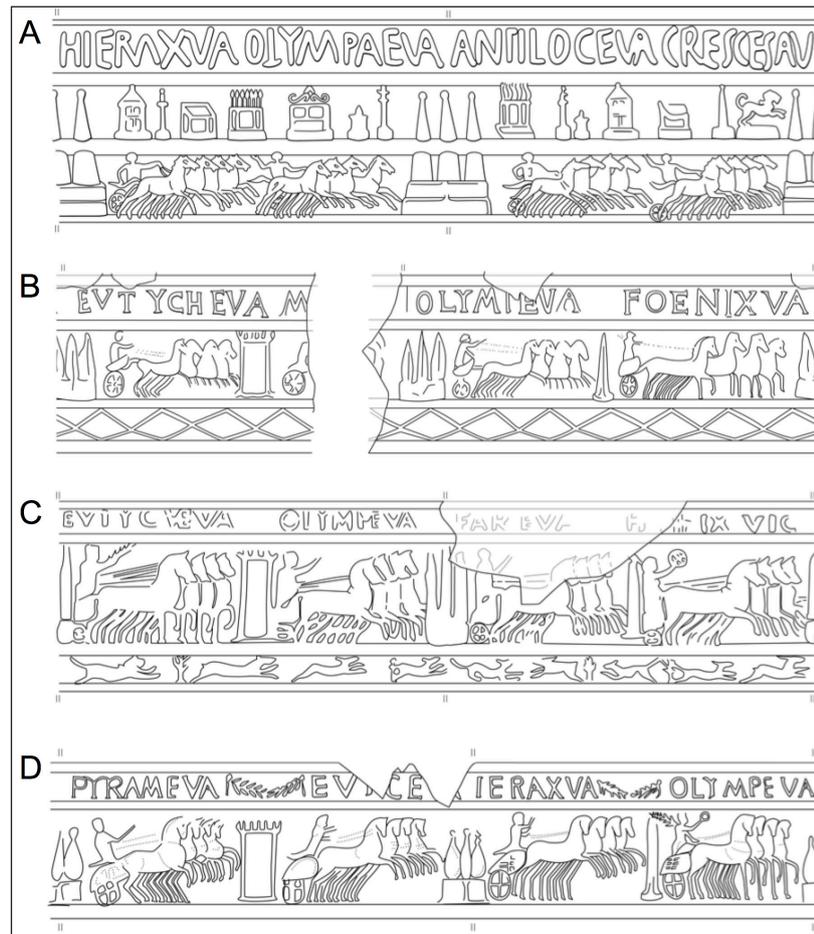
Figure 4: Drawings of the best-preserved circus cups (not to scale). **A)** the Colchester Cup (after Harden 1987: 168). **B)** the Mainz Cup (after https://www.cmog.org/artwork/chariot-cup). **C)** the Trouville Cup, with losses restored from the Schönecken Cup (after Sennequier 1998: 31). **D)** the Couvin Cup (after Fontaine 2010, Figure 2, by M. Destrée). Drawings by Tina Ross, reproduced with permission.

Although material, fabrication, and design connect the spectacle cups, the texts devoted to the two sports diverge in formulation. Whereas charioteers are addressed with name-verb phrases, gladiators are merely named. This discrepancy has important implications for sensory engagement as well as for the genres of writing that the cups present in miniature.

Charioteers

Part of the texts' interest lies in what they omit: reference to the four factions that supervised training and competitions, namely the Blues (*veneti*), Greens (*prasini*), Reds (*russati*), and Whites (*albati*) (Junkelmann 2000; Bell 2014). The cups focus instead on historical competitors. Four names appear on each vessel. That number may indirectly reflect the sport's underlying structure, as factions entered equal numbers of teams in each race.

Altogether, the cups record the names of at least twelve men. Three of the names from the larger repertoire have compelling correspondences in the broader historical record and point to men active in Rome in the first century AD. Eutychus, meaning 'Lucky' in Greek, had the dubious honor of being favored by Caligula (Horsmann 1998: 216–217, cat. no. 76). Suetonius (*Caligula*, 55.7) reports that the emperor was an avid fan of the Greens and gave this driver two million sesterces in gifts. 'Olympus' refers to the realm of the Greek gods or perhaps the games at Olympia in their honor. This name may be that of Claudius Olympus, another leading charioteer of the Greens, mentioned in a colleague's inscription (Horsmann 1998: 261, cat. no. 147; *CIL* VI, 37834). Musclosus, in turn, has a Latin name meaning 'Muscular' or, perhaps more colloquially, 'Muscle-boy.' A funerary inscription from Rome honors a Musclosus and indicates that he won three victories for the Whites, five for the Greens, two for the Blues, and 1,172 for the Reds (Horsmann 1998: 256, cat. no. 136; *CIL* VI, 10063). A different man named Pompeius Musclosus had an astoundingly

Figure 5: Four views of the Mainz Cup. **A)** Oblique view showing the loss area prior to restoration. Author's photo 2013. **B)** A charioteer between an obelisk and turning posts, with the phrase 'Foenixva' above. Photograph designated fair use, provided by the Corning Museum of Glass (n.d.). **C)** Oblique view, following restoration, with the turning posts centered. Author's photo 2017. **D)** Oblique view, following restoration, with the obelisk and lap counter centered. Author's photo 2017. Mold-blown glass, 5.7 cm h × 7.7 cm diam., c. AD 50–80, said to be from Mainz, Germany. Corning Museum of Glass (n.d.), Corning, 66.1.34.

successful career with the Greens, with 3,559 victories, as recorded in yet another colleague's inscription (Horsmann 1998: 255–256. cat. no. 135; *CIL* VI, 10048). In comparison to these other genres—histories and commemorative inscriptions—the cups' texts also omit both lurid anecdotes and tallies.

Instead, a verb accompanies each man's name and often indicates his fate in the race visualized by the figures beneath. The verbs' abbreviations require the reader to supply the necessary endings and thereby participate actively in the creation of the cups' verbal component. Three verbs dominate. *Av[e]* ('hail!') and *vic[it]* ('wins') are easily parsed, and one or the other often occurs once per cup to indicate the winner. *Va[…]* occurs three times on most cups and has proven more challenging to translate. The letters may stand for *vade* ('go!') or even the phrase *vade age* ('go on!') (Fontaine 2010: 116–117). They have more often been read as *vale*, the verb used for leave-taking, and idiomatically translated as 'good-bye' in modern scholarship. Yet the primary meaning of the verb *valere* is 'to be strong', and it was used to exhort all manner of prominent men in ancient graffiti (Fontaine 2010: 116). As we shall see, each cup's verbal component therefore requires individual translation based on the selection of verbs and their relation to the generic charioteers beneath (at least one of whom typically bears victor's prizes). It is significant that the names and the verbs together formed phrases that could be voiced from the circus stands, as Nelis-Clément (2008: 449) remarks in her assessment of circus soundscapes. Their presence on the cups prompted their utterance anew, if read aloud. In this way, the text captures and partly recreates the choral and aural experience of spectatorship. On the circus cups, the words portray the race acoustically, as it would have been experienced in the stands.

The words work together with the imagery to place historical charioteers in fantasy races and develop narratives that conclude with victory. On the Couvin Cup, for instance, the same verb (*va[…]*) is appended to all four names (**Figures 3** and **4D**): *Pyrameva Eut[y]ceva | Ieraxva Olympeva.* In this context, the verb might be translated 'go!' or 'be strong!', but certainly not 'good-bye', because the figure beneath 'Olympus' raises

the emblems of victory (**Figure 3F**). The Mainz Cup (**Figures 4B** and **5**) seems to take a similar approach. Its text can be restored to read *Eutycheva M[usclosae]|Olympeva Foenixva*. The charioteer beneath Foenix extends a barely discernable victor's wreath, and his team stands at rest (**Figure 5B**). The Colchester Cup, in contrast, limits the figures to two repeating poses, but varies the final verb (**Figures 2** and **4A**): *Hieraxva Olympaeva|Antiloceva Crescesav*. The verb *av[e]* (hail) distinguishes Crescens from his competitors. In this context, *va[…]* might be best understood as 'farewell!', though the distinction would still be clear with 'be strong!' or 'go!'. Although the development of these narratives is clear in modern drawings—which do the work of orienting the reader at the beginning of the sequence by always placing the victor last—anyone picking up the material text likely encountered the middle of the story. Indeed, some designs may acknowledge such readings *in medias res* by disrupting the narrative sequence. The cups from Schönecken and Trouville (**Figures 4C, 6** and **7**), for instance, indicate one victor in the text by announcing that 'Perix wins' (*Eutycheva Olympeva|Fareva Perixvic*), but place prizes in the hands of the charioteers beneath both Perix (wreath) and Eutychus (palm leaf). As all of these cups indicate, molds vary the victor's name, the number of victors, and whether the text or the imagery imparts the narrative's conclusion.

The execution of these material texts also varied considerably. On the Couvin Cup, the legibility of each text unit is enhanced by spacing and intervening imagery (**Figures 3** and **4D**). Double palm leaves divide the two name-verb phrases on each mold; the molds' visible seams separate the remaining ones. The Colchester Cup, in contrast, omits palm leaf dividers, but the words are no less legible for being tightly spaced (**Figures 2** and **4A**). Compared to the Couvin Cup, this one reveals that the scribe has carved the letters more deeply and more boldly into the mold, thereby creating larger cavities for the blown glass to fill. The cups from Mainz, Schönecken, and Trouville reveal flaws in the planning and production. The text on the Mainz Cup is a challenge to read not just because it is in extremely low relief, but also because the dark hue limits the effects of illumination (**Figures 4B** and **5**). The lengthy names Eutychus and Musclosus apparently proved challenging to fit on one mold: even though the craftsman excluded palm leaf dividers, he ran out of room and omitted the verb after Musclosus. The light-hued cups from Schönecken and Trouville have letters that barely register in the glass wall, but that can be recovered through comparison and magnification (**Figures 4C, 6** and **7**). In this case, illegibility resulted from either a dulled mold or insufficient pressure exerted when the glass was blown into it. Despite these infelicities, the vessels were sufficiently prized to be included in funerary assemblages, just as the ones from Couvin and Colchester were.

Gladiators

The gladiatorial cups also avoid a direct appeal to partisanship (**Figures 1, 8** and **9**). Whereas spectators supported a favored faction at the circus, they backed a particular fighting technique at the amphitheater (Teyssier 2009). Fans even described their affiliations with reference to equipment, so that a *scutarius* pre-

Figure 6: One side of the Schönecken Cup, showing two charioteers flanking an obelisk, with an animal hunt beneath, and the phrases '*Fareva*' and '*Perixvic*' above. Mold-blown glass, 6.5 cm h. × 8.5 cm diam., c. AD 50–80, Schönecken, Germany. Rheinisches Landesmuseum, Trier, 21008. Author's photo 2014.

Figure 7: One side of the Trouville Cup, showing a charioteer holding the victor's palm leaf and framed by turning posts and a lap counter, with an animal hunt beneath, and the phase 'Eutyche Va' above. Mold-blown glass, 6.8 cm h. × 8.2 cm diam., c. AD 50–80, Trouville-en-Caux, France. Rouen, Musée des Antiquités, 70.2.1 (VA 245). Photograph by Yohann Deslandes, © Musée-Métropole-Rouen-Normandie, reproduced with permission.

ferred Mymillon specialists (who bore *scuta*, long rectangular shields), and a *parmularius* favored Thracian specialists (who wielded *parmulae*, square shields). None of these words appears on the cups.

Instead, each cup names eight men. At least five of the names altogether recorded—Columbus, Proculus, Spiculus, Petraites, and Prudes—recur in other media. Suetonius (*Calig.*, 55.6), for instance, recounts that Caligula had poison rubbed in the wounds of Columbus, presumably because he posed a threat to the Thracians the emperor preferred. Proculus, in turn, was a mere spectator ordered by Caligula onto the arena floor, where he found success against the professionals, then earned execution for confounding the emperor's expectations (Suetonius, *Calig.*, 35.4). In contrast, Nero lavished the Myrmillon specialist Spiculus with excessive gifts (Suetonius, *Nero*, 30.5, 47.5). Spiculus and a competitor also appear in a Pompeian graffito depicting their match and recording their scores (*CIL* IV, 1474; **Figure 10**). Petraites occurs on Trimalchio's fictive silver cups (Petronius, *Sat.*, 50–52) and appears in a graffito, too. A Pompeian painting, now known only from descriptions, included the names Tetraites (an alternate spelling) and Prudes, along with their scores (*CIL* IV, 538). Like the circus cups, therefore, the gladiatorial ones name historical combatants, but without the exhortations and acclamations heard in the arena. In comparison to Suetonius' account, the cups focus exclusively on gladiators, while remaining silent on intrigues and specialization. In comparison to the wall-writing, they juxtapose the names of far more men, but similarly combine text and image (**Figures 8** and **10**). Perhaps drawing on both of these genres, the cups present condensed, celebrity-driven histories of the sport. When read in a horizontal sequence, through rotation, the words invited an informed reader's elaboration from memory. When read vertically in dialogue with the imagery, they could inform a novice's narration.

Whereas the words convey historical identity, the images communicate specialization through equipment and fate through pose. The Chavagnes Cup (**Figures 8B** and **9**), for example, pairs the men as follows (with specialization and action described in parentheses): Spiculus (Myrmillon, victor), Columbus (Thracian, perished); Calamus (Mymillon, in combat), Holes (Thracian, in combat); Petraites (Mymillon, victor), Prudes (Thracian, requesting reprieve); Proculus (Thracian, victor with palm), Cocumbus (Myrmillon, requesting reprieve). Petraites and Prudes are likely the same fighters mentioned in the Pompeian graffito (the former also having the distinction of being paired with a different foe on Trimalchio's fictive cup). Spiculus, shown with appropriate Myrmillon specialization, may well be the favorite of Nero and the star of the other Pompeian graffito. Proculus, perhaps fighting with the equipment of the Thracian he defeated, may be Caligula's victim. Cocumbus, if the 'c' is a misshapen 'l', may refer to the Mymillon he poisoned. If the fighters named on the cups are the same ones mentioned by Suetonius (Spiculus, Proculus, Columbus/Cocumbus),

Figure 8: Drawings of the best preserved gladiator cups (not to scale). **A)** the Chavagnes Cup, with barely discernable letters in grey (after https://www.cmog.org/artwork/cup-gladiator). **B)** the Montagnole Cup (after Sennequier et al. 1998, 55). Drawings by Tina Ross, reproduced with permission.

Figure 9: One side of the Chavagnes Cup, showing three gladiators, one holding a shield, one having dropped shield and gesturing for reprieve, and one holding a shield and a victor's palm leaf, above them the blurred names of Petraites, Prudes, and Proculus. Mold-blown glass, 7.1 cm h. × 7.5 cm diam., c. AD 50–80. Chavagnes-en-Paillers, France. Corning Museum of Glass, 54.1.84. Photograph designated fair use, provided by the Corning Museum of Glass (n.d.).

then they could never have occupied an arena floor together, because they belonged to different eras. The cups' texts are, in this sense, lists of all stars, as Ville (1964) recognized in his pioneering study.

On the Montagnole Cup, the outcome is indicated not just by the figures' poses, but also by the placement of names: those above gladiators in victorious stances align around the rim; those above the defeated are slightly smaller in size and hover near the top of the figural zone (**Figures 1** and **8A**). The following names are paired and, as on the cup from Chavagnes, the victor is consistently on the left: Gamus, Merops; Calamus, Hermes; Tetraites, Prudes; Spiculus, Columbu[s]. The first four are not known from literary sources, and the specializations attributed here are difficult to discern because the figures' shields are less clearly distinguished in length. Among the familiar last four, Tetraites has been spelled with a 'T' rather than a 'P', and the craftsman has run out of room for the 'S' in Columbus. Here, too, mold production complicated the text's design, and spellings vary.

These two approaches to textual design have consequences for aesthetics and legibility. Arrayed in a single register, the number of names required the letters to be smaller than those on the circus cups, and thus harder for the viewer to parse and read. When the letters are also shallow in relief, as on the Chavagnes Cup, they dissolve in an illegible blur (**Figure 9**). Such single-band designs could, however, be executed more successfully. On a cobalt blue fragment from Lyon (Lugdunum), France, the letters are taller, slenderer, and
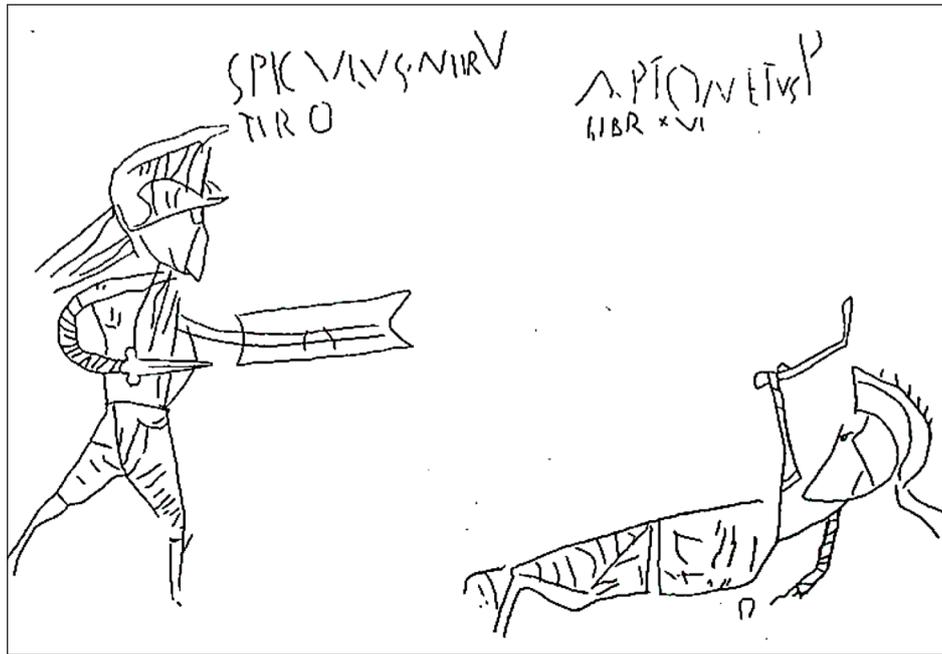
Figure 10: Drawing of a graffito (*CIL* IV, 1474) representing a gladiatorial match between Spiculus and Aptonetus. Before AD 79, *fauces* 38, House of the Faun, Pompeii, Italy. After Langner 2001: pl. 58, no. 1046.

deeper in relief (Robin 2016: 265–266). The result is that the names—the familiar [P]etraites, Prudes, and Proculus—are more legible, despite the darker hue of the glass (**Figure 11**). The two-tier solution exemplified by the Montagnole Cup allowed the letters to be both larger and more generously spaced; horizontal and vertical separation made them easier to find and connect with figures (**Figure 1**). Yet this latter arrangement is rarely attested in surviving fragments. The more common design, exemplified by the Chavagnes Cup, prioritizes an orderly format for the text with a clear horizontal sequence.

Given that someone reading a circus cup encountered speech about charioteers, while someone scanning a gladiatorial one found names alone, it would be useful to know whether the two series were invented simultaneously or if one developed in response to the other. Unfortunately, neither the historical names nor the archaeological record indicate precedence, so the question must remain open. What is clear, however, is that the cups are material texts without precedent. The formulations were not copied verbatim from other sources; the words' visual arrangement around the rim (and above the related figures) replicated no known vessel design; their materiality was unexpected, too, as letters had only become common in glassware a generation before. In comparison, the imagery of spectacle had more direct precedents in other media, but likewise found new experiential expression on the curved translucent cups.

Virtual Realities

The craftsmen inherited fundamentally different schemes for portraying the two sports, one premised on the architectural setting of the circus and the other focused on gladiatorial equipment. This discrepancy has gone unremarked because mid-first-century sports images are rarely analyzed together. The subjects' coincidence on the spectacle cups invites just such a comparison and has important implications for our understanding of the experience of the games in reality and in art.

Seen from the circus stands, charioteers were made distinct by their faction's colored jerseys, but these distinctions were lost in monochrome depictions. In contrast, the many monuments that typically lined the track's central barrier were in the middle of the action and had legible contours that were easy to replicate. The practice of juxtaposing charioteers to the monuments of Rome's Circus Maximus emerged on terracotta tiles (Marcattili 2009: 241–244) and characterized mold-pressed terracotta vessels (Landes 1990: 223–224), too, but found its most widespread expression on contemporary lamps. One, for instance, shows a driver racing past a column monument, an inscribed obelisk, a lap counter with dolphins, another column monument, a pavilion, and the *metae*, or triple turning posts (**Figure 12A**). Another excerpts the lap counter to represent the space and its events synecdochically (**Figure 12B**). Such lamps indicate the degree to which artists could take for granted widespread understanding of this visual vocabulary of spectacle. For the glass cups, craftsmen adapted these schemes to communicate an extended narrative and to account for the translucence of the glass.

Figure 11: Fragment of a cup depicting gladiatorial combat between [P]etraites and Prudes, with part of the name of Proculus also visible, mold-blown glass, c. AD 50–80, Rue des Farges, Lyon, France. Musée Gallo-Romain de Lyon-Fourvière. Author's photo 2011.

Figure 12: Lamps representing chariot races with circus architecture. **A)** A charioteer drives his team of four horses past the monuments of the central barrier (a column monument with statue, an inscribed obelisk, a lap counter with dolphins, a column monument with statue, a pavilion, a set of turning posts), with a fallen figure beneath, and the artist's stamp ('Teres'). Terracotta, 13.2 cm h. × 9.6 cm l. × 2.9 cm w., AD 30–70. Antikensaamlumg, Staatliche Museen zu Berlin, Preussischer Kulturbesitz, TC 951. **B)** A lap counter with seven dolphins. Terracotta, 8.5 cm h × 7.9 cm l × 2.9 cm w., AD 30–70. Antikensaamlumg, Staatliche Museen zu Berlin, Preussischer Kulturbesitz, TC 7481. Photographs by Ingrid Geske © SMB/Antikensaamlung, reproduced with permission.

At a gladiatorial match, the uninterrupted expanse required for the arena floor did not insert architectural elements amidst the fight. The archways through which gladiators entered and exited permanent amphitheaters were, moreover, increasingly common in Roman architecture. In this case, standardized equipment became the visual cue quickening recognition of a match. This weaponry scheme is apparent in a range of earlier media, from funerary monuments to terracotta vessels and lamps (Demerolle 2002; Coulston 2009; Kazek 2012; Flecker 2015). On one typical example, a Myrmillon takes on a Thracian in the most common pairing (**Figure 13A**). On another, the equipment alone indicates combat between these specialists

Figure 13: Lamps representing gladiatorial combat. **A)** A Myrmillon (left) fights a Thracian (right), with an ansate label naming them Acuvius and Hermeros. Terracotta, 15.7 cm h. × 10.2 cm l., late 1st century BC, said to be from Pozzuoli, Italy. British Museum, London, 1856, 1226.472. Photograph designated creative commons (CC BY-NC-SA 4.0), provided by the British Museum. **B)** Weaponry of the Myrmillon (left) and the Thracian (right), with shin guards, helmets, swords, and shields. Terracotta, 8.9 cm h. × 2.4 cm l., AD 40–80, Cyprus. Metropolitan Museum of Art, New York, 74.51.1849. Photograph designated public domain, provided by the Metropolitan Museum of Art.

(**Figure 13B**). In these ways, the conventions adapted for the cups communicate effectively with great visual economy, while also offering insight into the optical and pictorial reception of the empire's leading sports.

In addition, one key convention distinguishes the cup's figural zone from the textual one above. Unlike letters, figures were not expected to face rightward in Roman visual culture, though certain actions did have an expected directionality. An oblique line of sight to the cups therefore had the potential to reveal figures moving sensibly whether they were perceived on the vessel's near or far wall. This observation is fundamental to understanding the cups' virtual staging of sports events.

Charioteers

Whereas the designs of the gladiatorial cups differ principally in the arrangement of text in a single (mold group C) or split band (mold group D), those of the circus cups diverge in their presentation of figures. The composition exemplified by the Colchester Cup (mold group B) splits the pictorial band in two, with elements of the circus' central barrier above, and the charioteers beneath (**Figure 2**). The Couvin Cup (mold group A) illustrates the other solution, which locates the barrier's monuments among the figures in a single pictorial band (**Figure 3**). Both approaches are widely attested in fragments. (The four well-preserved cups listed in **Table 1** give a false impression of mold group A's predominance.)

The Circus Maximus has long been posited as the site that inspired the cups' architectural elements (though many other circuses existed at the time, including the Circus Vaticanus in Rome). Its central barrier remains unexcavated, but literary and artistic accounts indicate that that triple *metae* anchored either end, that an obelisk (now in the Piazza del Popolo) stood at the center, that a lap counter with seven dolphins stood in the northwestern half nearer the starting gates, that a lap counter with seven eggs appeared in the other half, and that the finish line lay off-center in this southeastern zone, just past the obelisk (Humphrey 1986: 84–91, 188–193; Golvin and Fauquet 2001). These and other architectural features of the barrier did not just locate the cups' charioteers in a circus, they organized the race's design and narrative sequence.

The composition of the scenes rigorously separates the charioteers from these architectural structures. Earlier depictions had, in contrast, presented complex overlappings of form (e.g. **Figure 12A**). On the cups, the harnessed horses may overlap each other, and the chariot may overlap the driver's legs, but the teams

always steer clear of the monuments (e.g. **Figure 3C–F**). These clarified arrangements make the forms easier to discern when the vessel walls themselves overlap in oblique views (e.g. **Figure 3A**). The representation of space in the scenes therefore takes into account the optical effects and spatial reality of the encircling glass wall.

One compositional strategy that remains constant is the placement of the *metae*, the triple turning posts that marked the two ends of the long central barrier around which the charioteers raced. On the cups, the *metae* invariably run across the vertical seams left by the conjoined molds. This effect is easiest to see in the partial misalignment of the molds that formed the Couvin Cup (**Figure 3C** and **3F**), but is also apparent in the drawings (**Figure 4**). This consistent location is key to understanding the design process, because it reveals that the craftsmen likened the molds' edges to the barrier's ends. The craftsmen designing the molds bifurcated the barrier and bowed its structures outward; they then assigned the single line of monuments that ran between the *metae* to one of the two molds. In the Colchester Cup's version of the design, the *metae* transcend the two figural registers, thereby uniting them (**Figures 2** and **4A**). All of the intervening monuments can be found in the upper band, while the charioteers are segregated in the lower one. In the Couvin Cup's version of the design, the two sets of *metae*, a lap counter, and an obelisk divide the charioteers paratactically (**Figures 3** and **4D**). They lie directly in the drivers' paths and share a ground-line with them. They thereby collapse the space of the barrier and the track. Full comprehension of the scenes consequently demanded a spectator's knowledge of the circus' built environment and how contestants moved around it. Both designs required viewers to separate the monuments and charioteers in their minds and understand that the latter operated in a larger spatial field encompassing the former.

Another consistent design feature that derives from the experience of spectatorship is the placement of the obelisk. On the track, it signaled the approaching finish line; on the cups, the victor is always placed in its vicinity. The Colchester Cup, for instance, has the verbal acclamation above and associated charioteer beneath this element (**Figures 2** and **4A**). The Couvin Cup locates the charioteer brandishing the victor's wreath and palm leaf between the obelisk and the *metae* (**Figures 3F** and **4D**), as does the Mainz Cup (**Figures 4B** and **5B**). Even in designs that include two victors, such as those on the Shönecken and Trouville Cups (**Figures 4C, 6** and **7**), one of the winners occurs in this location. The obelisk consistently cues the race's end.

In addition, the Couvin Cup illustrates how subtle variances in pose could enhance the narrative, as Fontaine (2010: 114–115) has observed. Just past one set of *metae*, horses surging into motion cause the driver and his chariot to tilt back; he guides the reins with his left hand, and the zigzagging whip extends from his right one (**Figure 3C**). The next team has just raced past the lap counter; their charioteer leans forward in the midst of whipping (**Figure 3D**). Having passed the second set of *metae*, the next charioteer stands upright; the whip, curved behind him, is about to be brought down on the backs of his steeds (**Figure 3E**). The fourth charioteer, as noted above, has just cleared the obelisk; he, too, stands upright, but brandishes a palm leaf in his left hand and the victor's wreath in his right (**Figure 3F**). His team has halted, with left hooves upraised. In this way, each charioteer serves as an avatar for the contestant named above, but can also be read as one victorious contestant progressing through the race.

Such sequences unfold clearly when rolled out in modern reconstruction drawings (**Figure 4D**), but prove more challenging to reproduce when manipulating the cups. (The recent 360-degree photographic rendering of the Mainz Cup (66.1.34) at the Corning Museum of Glass (n.d.) now permits such movement to be simulated online: https://www.cmog.org/content/chariot-cup.) In order for the ancient viewer to encounter the narrative sequence in order (*metae*, lap counter, *metae*, obelisk, *metae*) a cup has to be rotated leftward, the same direction that allows the text to be read most naturally (because the beginnings of words cross the field of vision first, as is still the case with scrolling text on television screens). Yet doing so has the effect of rewinding the action and causing the horses to gallop backwards, a confounding of expectations that was perhaps as amusing in antiquity as it is today. When the vessels are set in motion, it becomes clear that the textual and figural bands invite manipulation in opposite directions. Only rotating the cup rightward allows each team's horses to cross the field of vision before the charioteer does, as at the races. In rotating the cup rightward, however, the spatio-temporal semantics of the barrier's elements and the charioteers' poses become destabilized. These discrepancies, wherein the design makes more sense on paper than in motion, suggest that the craftsmen conceptualized the composition through sketches on a flat surface, rather than in the round.

Yet when a resting cup is glimpsed from above, all moments of the narrative appear simultaneously in a compelling new way. On the Mainz Cup, for example, when the *metae* are aligned, the lap counter and obelisk disappear, and the viewer enjoys an imagined aerial glimpse of the barrier's length (**Figure 5C**). Rotating the cup so that the obelisk and lap counter are centered offers the more common view enjoyed by spectators in the lengthwise stands (**Figure 5D**). Centering the teams results in a palimpsest of charioteers and monuments that may more accurately capture the event's chaos (**Figure 5A**, see also **Figure 3A**). All of

these angles allow the teams on the near and far walls to be seen racing in opposite directions, just as contestants on alternate sides of the barrier would have appeared to spectators at the event. That the figures are actually upright on a vertical vessel wall, as opposed to physically horizontal on a hand-held lamp or a floor mosaic, enhances the illusion. Only in a circular translucent medium is this virtual effect possible.

Gladiators

The gladiatorial cups' pictures diverge in two key ways. First, the vessels' potential for mobile legibility was enhanced by the gladiators' freedom of orientation: upright fighters, unlike horse-drawn chariots, can move convincingly in any direction. Second, in the absence of architectural elements to provide temporal cues, narrative outcomes are indicated by the gladiators' stances and the placement of their shields.

The Chavagnes Cup's scenes unfold as follows (**Figures 8B** and **9**). In what we might take to be the first pair, a victor has killed his foe, who lies recumbent; in the second, the competitors are prepared to begin combat; in the third, a victor stands poised for action while his adversary has abandoned his shield and signals for a verdict from the stands; in the fourth, the winner holds the palm leaf, while his opponent awaits his fate. If the figures serve not merely as avatars for the contestants named above, but also illustrate the combat of a single pair from start to finish, then the sequence must begin in the middle, with the second pair described, and end with the first pair (with the victor understood to have executed a denial of reprieve). Angled views juxtapose different moments of the narrative. When centered, the second and fourth pairs visualize a fight's beginning and climax (**Figure 14A**); the first and third pairs show a climax and finale (**Figure 14B**).

Starting from the same point on the Montagnole Cup, the first gladiator strides toward his fallen foe, who still brandishes his sword and shield from the ground (**Figures 1** and **8A**). In the second pair, the combat is about to begin, as the left figure charges forward, but his antagonist has yet to assume a fighting stance. In the third pair, an armed gladiator stands at rest while his opponent has dropped his shield and gestures for a verdict; in the fourth pair, the victor looms over his recumbent, and presumably deceased, rival. In a consecutive reading, enabled by rotating the cup, the episodes cannot logically depict the continuous combat of a single pair. Such a reading is also discouraged by upright palm leaves covering the mold seams. Cross-cup juxtapositions more effectively hint at cause and effect. When the second and fourth pairs are viewed together from above, the gladiators advancing with shields outstretched appear diagonally across from each other; the gladiator yet to assume a fighting stance stands diagonally across from a dead, reclining counterpart (**Figure 15A**). The first and third pairs, in turn, combine scenes where one gladiator has fallen but is still armed, with one where the vanquished has dropped his shield and gestures to request a verdict (**Figure 15B**). When the cups are glimpsed from above, with the order of victor and victim reversed on the back wall, a chiastic (x-shaped) composition emerges to anchor the illusion.

Though the two gladiatorial designs take subtly different approaches to visual narration, they offered their users similar ways of experiencing the games. When held perpendicular to the gaze, the cups focus attention on
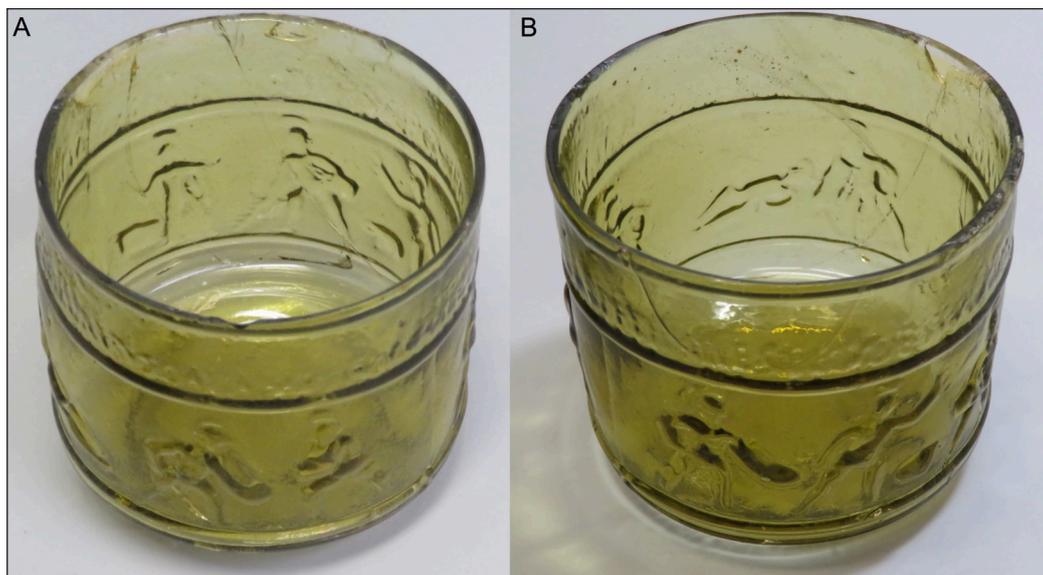

Figure 14: Oblique views of the Chavagnes Cup. Author's photos 2017.
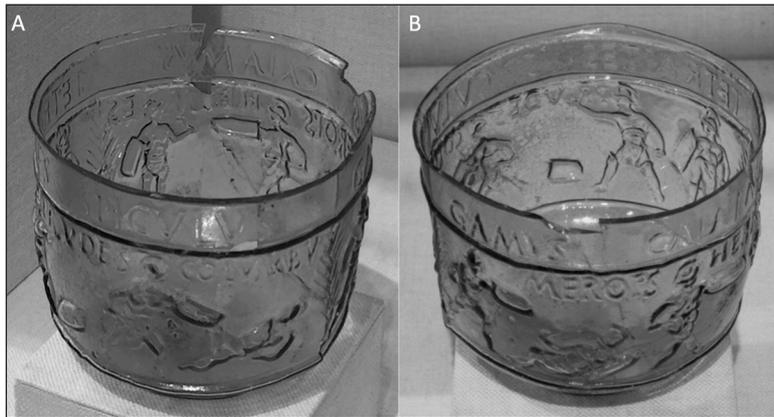
Figure 15: Oblique views of the Montagnole Cup. A Author's photo 2016. B Author's photo 2014.

scenes of single combat. When glimpsed from above, they pan out to a synoptic view of an arena with multiple fights occurring simultaneously, a view that would have been familiar to anyone who had attended a match.

Aerial views of spectacles became common in Roman art by the late first century AD. The painting of a riot at Pompeii's amphitheater (Museo Archaeologico Nazionale, Naples, inv. no. 112222), coins celebrating the inauguration of the Colosseum (RIC II Domitian 131) and the renovation of the Circus Maximus (RIC II Trajan 571), and provincial polychrome mosaics depicting chariot racing (Bergmann 2008) all illustrate this trend. Bergmann (2008) has argued persuasively that these later images offer telling evidence for an emerging visual preference informed by spectatorship. What has not been noted is that the cups anticipate this development by placing such scenes directly in the hands and beneath the eyes of viewers. The cups' achievements lie not in their mere representation of spectacles, but in the miniature multi-dimensional simulations they staged through the magical alchemy of molded translucent glass.

Provincial Purchases

Rome stands out as the city that most likely inspired the initial corpus. The intrigues involving emperors and named contestants occurred there. And, on the circus cups with the most architectural detail, correspondence to descriptions of the Circus Maximus connects the designs to this location. Yet few examples have been recorded in Italy. In Rome, single fragments have been excavated on the Palatine Hill and in proximity to the *Meta Sudens*, and three fragments have been identified in the Gorga collection of unprovenanced finds from the city and its environs (Carettoni 1949; del Vecchio 2001). Ten other sites in Italy have yielded additional fragments (del Vecchio 2001). The hundreds of finds in the northwest provinces strongly suggest that most, if not all, production took place abroad. Recent catalogues have, moreover, begun to map regional patterns of distribution (Foy and Fontaine 2010: 85–93).

Studies focused on the cups' subject matter have often categorized the vessels as souvenirs of the games (Künzl and Koeppel 2002: 20–22). Those considering their geographic dispersal have interpreted them further as vehicles of imperial propaganda promoting a Roman way of life (Foy and Fontaine 2010: 93). Neither solution is wholly satisfying. The cups' experiential aspects certainly would have enhanced their effectiveness in triggering memories of spectatorship, yet how can we know whether those who beheld them possessed such memories or bought them for that purpose? Nor is it likely that the craftsmen responsible for their invention envisioned their utility for proselytizing abroad. John Humphrey (1986: 193), in his landmark treatise on Roman circuses, assessed the cups aptly when he called them '…the result of an astute venture by glass factories bent on profiting from the spreading popularity of the Roman games throughout the western provinces.'

The industrial, domestic, religious, and funerary contexts of the finds suggest that consumers had discrepant frames of reference for the wares (Sennequier et al. 1998: 94–95). The cups' presence in provincial capitals such as Lyon (Robin 2016: 265–266), forts such as Vindonissa (Rütti et al. 1987: 102), and remote country-sides such as that around Montagnole (Sennequier et al. 1998: 133, cat. no. 78) place them in communities with highly variable access to spectacles and their attendant memories. Of the three sites just listed, for instance, Lyon (Desbat and Savay-Guerraz 2012: 66–70) and Vindonissa (Frei-Stolba et al. 2011) had amphitheaters during the period of the cups' flourishing. None of the three had circuses at the time

(though Lyon had one by the early second century). In all of these contexts, consumers could have included officials from Italy, merchants or soldiers from around the Mediterranean, or province-born locals. Their familiarity with and interest in the metropolitan history of the sports would vary accordingly, as would the cups' mnemonic or didactic potential. Outside of Rome—the city where the games occurred with the greatest frequency—the cups may not have mediated memories so much as they simulated experiences that were perhaps desired but often inaccessible.

Materiality and the marketplace surely impacted consumption as much as cultural affinity. In this regard, the recent excavations of a glass workshop at Rezé, France, are instructive. Among thousands of fragments, likely gathered for recycling, were the remains of four cups with chariot racing scenes and a jar with a human foot, likely a gladiator's (Pirault and Bellanger 2008: 55; Foy and Fontaine 2010: 93, cat. 101; 96 cat. 111; 101 cat. 126, 127; 110, cat. 153). Their colors range from light blue, bluish-green, and yellowish-green, to darker amber and cobalt. Such variety, even in a secondary use context, hints at the range of options simultaneously available in the region. It also reminds us that the initial viewing context for the cups was their place of acquisition, likely a workshop or boutique. The spectacle wares would have stood out on any shelf because of their unusual combination of translucent words and images. Ancient craftsmen may even have pursued a clever sales strategy still used in the present day: by offering a selection of wares, the question became not whether to buy, but which one. Regardless, we cannot know whether an owner responded more to theme or shape, image or text, or even lighter or darker hues. We also cannot know to what degree decisions were constrained by what was available for purchase when the need or whim arose. For all of these reasons, the cups' popularity abroad should not be attributed solely to their subject matter or metropolitan associations.

In the end, mold-blown spectacle wares flourished for only a couple of generations, and their obsolescence relates to larger trends in glassmaking. Price (1991: 74) has argued that a growing preference for glass that was colorless (technically more difficult to source and manufacture) and decorated by hand (thereby more time-consuming to produce) may mean that 'glass itself became too precious to use for mold-blown vessels.' Later cups bore painted or etched images of charioteers and gladiators, sometimes labeled, but these decorative techniques create images that resolve principally on the exterior of the vessel wall (e.g. Metropolitan Museum of Art, New York, inv. nos. 59.11.14 and 22.2.36–37). In Roman glassware, the spectacle cups are unique in the material texts and virtual simulations they present.

Conclusion

Glass of all kinds fascinated Roman authors (Stern 1999; 2007). Although their accounts do not describe the spectacle cups directly, a phenomenological approach to those that survive can illuminate the effects of their innovations. Because of the translucence of the glass and the open shape of the cups, the words and images can be perceived on both sides of the vessel wall and from multiple angles. Rotation introduces a fourth dimension, time, and is in fact the best way to read these material texts in full. When glimpsed from above, the cups present synoptic views of contests in a perpetual state of unfolding, and did so before aerial perspectives of the games became common in other forms of art. For all of these reasons, encounters with the spectacle cups should be ranked among the empire's novel sensory experiences.

In addition, their designs reveal distinct strategies for portraying the empire's leading sports. Acoustically, the chariot racing cups record exhortations heard and uttered by fans. Optically, they capture the architectural elements visible amidst the contest as it was seen from the stands. The gladiatorial cups forego the exhortations, perhaps because a larger number of figures required identification. They also omit any hint of setting, perhaps because architectural features were not apparent amidst the fighters on the arena floor. The spectacle wares illustrate the discrepant impact of the spectator's sensory experience on representations of the games.

Many factors might account for the fact that this is the first in-depth study of the cups to appear in a Roman archaeological journal. Prior accounts of the cups, dispersed in excavation reports, conference proceedings, and regional catalogues, have invaluably established the parameters of the corpus. For specialists not focused on glassware or games, however, the cups have been easy to miss or dismiss as minor curiosities. Yet, like the Iliac tablets (Squire 2011) and portable sundials (Talbert 2017) explored in recent monographs, they prove that miniature material culture rewards philological and art historical analyses. In the case of the cups, a phenomenological approach typically reserved for complex-built environments reveals new ways of reading and watching the games that were so central to Roman culture. In the end, the novel experiences offered by the cups made the vessels themselves desirable. They became a spectacle in their own right, something worth seeing, both in Rome and in the provinces.

Acknowledgements

Competing Interests

Abbreviations

CIL   *Corpus inscriptionum latinarum* – Königlich Preussische Akademie der Wissenschaften zu Berlin. 1893. *Corpus inscriptionum latinarum.* Berlin. Volumes 4 and 6.

RIB   Roman Inscriptions in Britain – Collingwood, R.G. and Wright, R.P. 1965. *The Roman Inscriptions of Britain. II, Instrumentum domesticum (Personal Belongings and the Like).* Stroud: Alan Sutton.

RIC   Roman Imperial Coinage – Mattingly, H. et al. 1923. *The Roman Imperial Coinage.* London. Volume 2.

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