

Divine Manifestations: Gods and Machines in 5th-Century BCE Greek Tragedy

Jessica Paga

Abstract: *The use of stage machinery to achieve spectacular effects in ancient Greek tragedy is a common embellishment to conceptions of how these plays were staged: the so-called deus ex machina convention. While stagings “on high” were certainly used in tragic plays, their frequency need not have been as widespread as often thought, nor achieved via the mēchanē (crane) as often as is posited. Based on a practical approach to theatrical stage conventions, mechanics, and the archaeological remains of the Theater of Dionysos in Athens, this paper suggests a more conservative reconstruction of ancient production in order to highlight how such an approach unlocks new staging possibilities. Moreover, by grounding divine appearances in the mechanical logistics of the 5th-c. BCE theater, the transformative nature of tragic performance is brought to the fore in a holistic way.*

Keywords: *theater, tragedy, skēnē, crane, epiphany*

Actors dressed as gods soaring through the air, alighting for a pronouncement and then disembarking, swooping in and out to resolve conflicts, sow discord, or wrap up plot threads: this is how we often picture the *deus ex machina* scenes familiar from so many tragic plays. The phrase itself – god from the machine – weaves together ideas of mechanical and divine automation, calling attention to the epiphanic appearance of deities through anthropically crafted mechanisms. The resultant spectacle is often taken to be a commonplace occurrence in Greek tragedies, effective through the willing suspension of belief on the part of the ancient

Greek, Roman, and Byzantine Studies 66.2 (2026) 289-335

ISSN 2159-3159

Article copyright held by the author(s) and made available under the
Creative Commons Attribution License

CC-BY <https://creativecommons.org/licenses/by/4.0/>

audience.¹ The phrase, *deus ex machina*, has even become shorthand for any divine epiphanic appearance in a play, disassociated from the actual mechanism and/or functioning under the assumption that every divine appearance was mechanically achieved.² But how accurate is the reconstruction of such physical action? And in the slippage between reality and imagination as it existed and was witnessed on the tragic stage, how were the myriad transformations – human actor to divine being, wooden stage building to sacred temple, spectator to sacred witness – realized?

Building on the authoritative work of Mastronarde, this article reconsiders the evidence for the use of the *skēnē* roof and the *mēchanē* (crane) as spatial venues for divine and supernatural appearances in tragic plays of the 5th-c. BCE, in order to highlight the physical realities of staging ancient plays, to underscore the implications for reconstructing stagings “on high” in the theater as it existed at the time, and to reflect on the experience of theatrical transformation.³ Given the tendency to refer to any appearance of a god in

¹ In a cognitive approach to *deus ex machina* scenes in tragedy, Budelmann eschews the phrase “suspension of belief” in favor of “make-believe” (“Belief, Make-Believe, and the Religious Imagination”); see also Easterling “Gods on Stage in Greek Tragedy.” For the force of divine epiphany outside dramatic performance, see Platt, *Facing the Gods*, 124–69; “Epiphany,” 500–1.

² See, for instance, Chondros, “Deus-Ex-Machina Reconstruction and Dynamics,” and Chondros et al. “‘Deus-Ex-Machina’ Reconstruction in the Athens Theater of Dionysus” (largely building off Dimarogonas, “Mechanisms of the Ancient Greek Theater”), who assume every divine appearance was a *deus ex machina* scene that used the crane, or Wildberg, “Piety as Service, Epiphany as Reciprocity,” who, in his excellent treatment of divine epiphany as a dramatic and literary device that illuminates certain ontological concepts circulating in late 5th-c. Athens, nonetheless labels all divine epiphanic occurrences *deus ex machina* scenes regardless of how the appearance was effected.

³ Mastronarde, “Actors on High.” Other work on the *deus ex machina* (as built device and/or literary construct) includes: Bethe, *Prolegomena Zur Geschichte des Theaters*; Dörpfeld and Reisch, *Das Griechische Theater*; Spira, *Untersuchungen zum Deus ex machina bei Sophokles und Euripides*; Bieber, *History of the Greek and Roman Theater*; Hourmouziades, *Production and Imagination in Euripides*; Dimarogonas, “Mechanisms of the Ancient Greek Theater;” Wildberg, “Piety as Service, Epiphany as Reciprocity;” Chondros, “Deus-Ex-Machina Reconstruction and Dynamics;” Chondros, et al., “‘Deus-Ex-Machina’ Reconstruction in the

a tragic play as a *deus ex machina*, it is imperative to disambiguate divine epiphany from actual usage of the crane.⁴ This matters because it carries real implications for how the physical structure of the 5th-c. theater is understood, how dramatic conventions used (or did not use) that built space, and for unpacking the intersection between performance and technology. It also facilitates new avenues for thinking about initial stagings and reperformances by grounding understanding in a robust and holistic approach to ancient text and performance. The evidence includes the surviving extant tragedies by Aeschylus, Sophokles, and Euripides, and the archaeological data from the Theater of Dionysos in Athens, the principal venue for most – if not all – of the initial stagings of the plays discussed herein.⁵ This analysis underscores spatial separation

Athens Theater of Dionysus;” Möllendorff, “Technologies of Performance;” Bur, *Technologies of the Marvellous in Ancient Greek Religion*.

⁴ The slippage between describing a dramatic scene as a *deus ex machina* scene and positing the actual use of the crane is illustrated by Bur’s analysis of Sophokles’ *Philoktetes*, where she notes that despite arguments concerning Herakles’ final appearance (on the so-called *theologeion* (an anachronistic supposition by Jebb, *Sophocles*, 217), on the *skēnē* roof, or via the crane), scholars generally refer to the actor’s entrance as a *deus ex machina* (Bur, *Technologies of the Marvellous in Ancient Greek Religion*, 83, n. 104). If *deus ex machina* becomes shorthand for the sudden appearance of a divinity to wrap up loose ends, deliver a prophecy, or put a stop to particular actions (Mikalson, *Honor Thy Gods*, 64–7; Dunn, *Tragedy’s End*, 26–8; Brulé, *Voir et Entendre le Dieu ‘Apo Mechanes’ d’Euripides*,” 165–6), then the result is a phrase that is at once divorced from its literal meaning and that facilitates assumptions regarding “expected” modes of divine representation. For a demonstration of the potential results of such slippage and its implications, see Chondros et al., where the assumed use of the crane for every divine appearance leads the authors to reconstruct a crane capable of lifting the 15-person chorus of Oceanids in the *Prometheus Bound*, purely on the basis of their divine nature and without consideration of whether this would be dramatically necessary or feasible given the archaeological remains of the theater (“Deus-Ex-Machina’ Reconstruction in the Athens Theater of Dionysus,” 172–3; largely a repetition of Chondros, “Deus-Ex-Machina Reconstruction and Dynamics,” first posited as fact by Dimaragonas, “Mechanisms of the Ancient Greek Theater,” 231–2).

⁵ In order to center tragic stage conventions, fragments are not considered, nor are comedies and satyr plays, except as comparanda for certain technical matters; archaeological data from other theaters is used as comparanda when

as a way to deepen considerations of the metaphysical divide in theatrical stagings and the impact this may have had on the experience of the spectator, within the rubric of a practical approach to ancient stage conventions. The result is an account of how the mechanical conventions of tragic performance worked to affect the transformations depicted and reified on the stage.

The Evidence: Texts

In *Poetics*, Aristotle writes that tragedy, like all poetry, involves *mimēsis*. In the case of drama, that *mimēsis* is, in part, achieved via *opsis* (1449a–b), which itself is dependent on material resources (1453b).⁶ These material resources include things like masks and costumes, but stage machinery also falls under this rubric. In what some interpret as Aristotle’s hostility to the use of stage machines, he claims that the denouement of plots should come from the plot itself, not from the *mēchanē* (1454a–b).⁷ His exception for appropriate use of the *mēchanē* is when it is used to indicate events beyond human knowledge or beyond the scope of the drama itself. But this passage of *Poetics*, for many, hints at a perceived overuse of the *mēchanē*, an overreliance on stage machinery to add glitter and glamor, as if every play on the Athenian stage included a god swooping in from the

appropriate. For the argument that Aeschylus’ *Persians* was initially staged in Syracuse (prior to its 472 staging in Athens), see Boshier, “Hieron’s Aeschylus” (with earlier bibliography), further discussed in the Appendix.

⁶ For the usage of ὄψις (*opsis*), usually translated as “spectacle,” in Aristotle, see especially Meineck, “The Embodied Space,” 29–30; Gianvittorio-Ungar, *Narratives at Play in Aeschylus*, 56–9.

⁷ Ar., *Poetics* 1454a–b: φανερόν οὖν ὅτι καὶ τὰς λύσεις τῶν μύθων ἐξ αὐτοῦ δεῖ τοῦ μύθου συμβαίνειν, καὶ μὴ ὥσπερ ἐν τῇ Μηδείᾳ ἀπὸ μηχανῆς καὶ ἐν τῇ Ἰλιάδι τὰ περὶ τὸν ἀπόπλουν (“It is clear, then, that the resolution of the play should result from the play itself, and not, like in the *Medea* and in the embarkation in the *Iliad*, from the crane”). All translations are my own unless otherwise indicated. For pertinent examples of how scholars have interpreted Aristotle’s disparagement of the crane to imply its overuse, see especially Pickard-Cambridge, *The Theatre of Dionysos in Athens*, 127–8; Taplin, *The Stagecraft of Aeschylus*, Appendix F. Pickard-Cambridge collects other ancient testimonia for the use of the crane (*The Theatre of Dionysos in Athens*, 127–8), whose account should be supplemented by Taplin’s discussion (*The Stagecraft of Aeschylus*, 444–7), with the caveats indicated below and in the Appendix.

crane to solve problems with the result that the machine became a clichéd and facile way of addressing real conflict.⁸

While this may have been a real occurrence in the staging and, especially, the restaging of plays in the mid-4th-c., there is danger in retrojecting this assumption to the plays of the earlier 5th-c., namely the initial stagings by Aeschylus, Sophokles, and Euripides in the Theater of Dionysos in Athens for the Great Dionysia.⁹ Indeed, Taplin has argued that the *mēchanē* was not even used in tragic performance before ca. 425.¹⁰ These problems are compounded by the lack of stage directions within the ancient texts and by the lack of permanent architecture and physical evidence for the 5th-c. *skēnē* and associated machinery. How, then, can we reconstruct the mechanics of these initial stagings? As has been noted by several scholars, the texts themselves may not contain stage directions, but they do contain references, both implicit and explicit, to the physical actions of characters on stage; Greek tragedy also followed several stage conventions, such as using a limited number of actors and relaying physical actions and events through ekphrastic speech, and the manipulation of these conventions can further shed light on the issue.¹¹ By examining the precise language used, paired with

⁸ See, for instance, Pickard-Cambridge *The Theatre of Dionysos in Athens*, 127–8.

⁹ Such caution is also suggested by Wilson, who notes that Aristotle's view of "spectacle" is possibly a reaction against the overuse of these material elements in the 4th-c. (*The Athenian Institution of the Khoregia*, 343, n. 172); see also Gianvittorio-Ungar for the dangers of retrojection (*Narratives at Play in Aeschylus*, 12–14, 20–1). Similar cautions should be employed in taking Antiphanes (fr. 189.13–17 *PCG*) as proof that the crane was overused; while it may have been viewed as such in the 4th-c., this does not constitute positive evidence of overreliance in the 5th-c.

¹⁰ Taplin, *The Stagecraft of Aeschylus*, 444. I have reason to disagree with this assessment (see below regarding the *Prometheus Bound*), but the point remains that the *mēchanē* was likely more of a rarity in tragedies of the 5th-c. than during Aristotle's time. Newiger also discounts the use of the crane prior to the 2nd half of the 5th-c. ("Ekkyklema und Mechané in der Inszenierung des Griechischen Dramas").

¹¹ Implicit and explicit references in reconstructing "stage directions" in tragedy: Hourmouziades, *Production and Imagination in Euripides*; Dale, "Seen and Unseen on the Greek Stage;" Taplin, *The Stagecraft of Aeschylus*; Halleran,

a grounding in recognizable stage conventions of the 5th-c., it is possible to arrive at a few conclusions.

First, the textual evidence: extant tragedies that either require or imply that an actor appear in an upper spatial plane.¹² There are two ways such elevated stagings could have occurred. An actor could appear on the roof of the *skēnē*, accessed either via an internal ladder (or, less likely, internal staircase) and trapdoor or from a ladder propped against the back of the structure.¹³ In either configura-

Stagecraft in Euripides; Pöhlmann, “New Arguments for a Skene Building in Early Greek Tragedy;” Sommerstein, “No, They Didn’t Write Stage Instructions, but...;” in comedy, Revermann, *Comic Business*. For Euripides’ use of stage conventions, see also Arnott, “Euripides and the Unexpected.”

¹² The present analysis should be understood as augmentation of Mastronarde’s “Actors on High” article. Table 1, therefore, and the brief notes on each play in the Appendix, are complements to his Appendixes 1–3, rendering similar (albeit more selective) data in tabular form. The reader will note, however, several areas where Mastronarde is more convinced of a staging with the crane, whereas I take a more conservative view (for example, the appearance of Herakles in Soph. *Phil.* at 1409: both Mastronarde and I find it likely that this scene occurred “on high,” but whereas Mastronarde believes the crane was “perhaps” used (“Actors on High,” 283; followed by Schein, *Sophocles: Philoctetes*, 14, 334), I catalogue the appearance as “likely” with either roof or crane, although I prefer the roof (as does Seale, *Vision and Stagecraft in Sophocles*, 54 n. 56); or, similarly, the final appearance of Dionysos in Eur. *Bach.* at 1330: Mastronarde indicates the crane was very likely used (“Actors on High,” 284), whereas I catalogue it as “likely” and prefer a staging on the *skēnē* roof). The point of noting such areas of disagreement is to indicate where there is still room for engagement with the concept of actors appearing “on high,” which in turn opens the door to thinking about different types of stagings. Plays surveyed: Aeschylus – *Ag.*, *Cho.*, *Eum.*, *Pers.*, *PB.*, *Seven*, *Supp.*; Sophokles – *Ajax*, *Ant.*, *Elec.*, *OK*, *OT*, *Phil.*, *Trach.*; Euripides – *Alk.*, *Andr.*, *Bacch.*, *Cyc.*, *Elec.*, *Hek.*, *Hel.*, *Herakl.*, *HE*, *Hipp.*, *Ion*, *IA*, *IT*, *Med.*, *Ores.*, *Phoen.*, *Rhes.*, *Supp.*, *Tro.*

¹³ I prefer a reconstruction with a ladder because they are simpler to make, more readily at hand, and moveable. A built staircase for a temporary wooden *skēnē* (such as was employed for much of the 5th-c. in Athens, as detailed below) is at odds with least-cost construction practices and allocation of resources. A lightweight movable ladder, on the other hand, could be swapped between the *skēnē*’s interior and exterior as needed, for all the plays performed over several days of the festival; Mastronarde expresses a similar preference for lightweight and versatile elements of scenery (“Actors on High,” 253).

tion, we might also imagine that a lightweight movable screen could be employed on the roof to keep the trapdoor entrance hidden, if needed or desired. Alternately, an actor could be lifted from behind the *skēnē* via a crane to appear overhead.¹⁴ Despite stage directions and suggestions added by editors and commentators, it seems unlikely that an actor who appeared via the crane would “alight” on the *skēnē* roof or (even more implausibly) down in the orchestra; instead, he would probably remain aloft.¹⁵ In both cases of actors appearing on high (*skēnē* roof or crane), a physical separation and elevation from the rest of the cast and chorus is achieved, spatially enacting the transformation of mortal (actor) to divine being.

Table 1 details the plays for which an actor *definitely, likely, or possibly* appeared in an elevated venue.¹⁶ A **definite** example means that

¹⁴ There is no firm evidence that the crane was positioned behind the *skēnē*, but this remains its most likely location (although writing far later than the heyday of Athenian theatrical production, Pollux 4.121–132 locates the crane behind the “left” parodos).

¹⁵ There are numerous examples of assuming an actor could alight or be lowered into the orchestra; I offer one instance which is generally illustrative of the trend: in his Loeb edition of Eur. *Herakles*, Kovacs inserts the following editorial stage remarks for the appearance of Lyssa and Iris at 815: “On the *mechane* two goddesses, Lyssa, snaky-haired goddess of madness, and Isis, messenger of the gods, fly through the air and alight on the roof of the palace” (*Euripides: Suppliant Women, Electra, Heracles*). In fact, there is no textual evidence from the plays to support the idea that an actor could be hoisted up with the crane, land on the *skēnē* roof or orchestra, act and move around, and then return to the crane to be whisked off. At the very least, this would involve the actor being able to get himself out of and back into a hypothetical harness, while still performing his role, resulting in a clunky break of dramatic momentum; at worst, the actor might not be able to get himself safely back into the harness, with comedic and/or dangerous ramifications. It is more likely that actors lifted by the crane remained in the air for the duration of their scene. Such a scenario is safer for the actor and crane operator and easier to facilitate. It is possible that instead of a harness, the actor stood on a wooden plank, holding the ropes (a “trapeze” arrangement), although this could pose even more safety risks, especially in inclement or windy weather. The logistical issues involved in using the crane are discussed further below. I employ the pronouns he/him because all acting roles and chorus were filled by men.

¹⁶ This tripartite division is one of the principal differences between my analysis and Mastronarde’s; in general, I am more skeptical (fewer *definite*

there is internal textual evidence that necessitates an actor appearing in an elevated position. A **likely** example means that there is no clear textual evidence that necessitates an elevated venue, but one would be consistent with dramatic conventions, would probably be expected by the audience, and would not cause any staging issues. A **possible** example means that an elevated staging may have been used but is not supported by explicit (or implicit) textual evidence or dramatic convention; nonetheless, either due to the nature of the character or the action of the plot, a staging on the *skēnē* roof may have occurred and would not have been considered out of the ordinary. An important caveat to all of these examples is that textual references to flying, fluttering, floating, and similar winged allusions may indicate an elevated position, but do not always demand one: costumes and choreography could convey the idea of flying while remaining grounded, and while a poet may have envisioned an actor appearing via the crane, the realities of performance may have necessitated a roof or even grounded appearance.¹⁷

stagings) and prefer the *skēnē* roof over the crane.

¹⁷ Mastronarde, "Actors on High," 253–4; Newiger, "Ekkyklema und Mechánē," 36. Table 1 should be read alongside the brief explanations for each play in the Appendix. For all instances of "Roof or Crane," a staging on the *skēnē* roof is preferred.

Table 1: Plays with Definite, Likely, and Possible Elevated Stagings

Differs from Mastronarde (1990): differences include certainty of staging on high and/or mechanism of appearance (roof or crane).

Definite (12)

Author	Play	Date	<i>Skēnē</i> Roof	Crane	Roof or Crane	Passage(s)	Differs from Mastronarde
Aeschylus	<i>Agamemnon</i>	458	X			1–39 – watchman	
Aeschylus?	<i>Prometheus Bound</i>	Ca. 450?	X			125–135, 272–281 – chorus	
Aeschylus?	<i>Prometheus Bound</i>	Ca. 450?			X	286, 394–395 – Oceanos	
Euripides	<i>Andromache</i>	425			X	1226–1272 – Thetis appears epiphanically	X
Euripides	<i>Elektra</i>	Ca. 420			X	1233–1359 – Kastor and Polydeukes appear	X
Euripides	<i>Herakles</i>	Ca. 416			X	815–874 – Iris and Lyssa appear	X
Euripides	<i>Ion</i>	Ca. 413?			X	1549–1623 – Athena appears	X

Euripides	<i>Orestes</i>	408	X		1567–end – Orestes, Pylades, Hermione (and likely Elektra) on roof	
Euripides	<i>Orestes</i>	408		X	1625–1693 – Apollo on crane	
Euripides	<i>Phoenician Women</i>	410/09	X		88–201 – Antigone and servant	
Euripides?	<i>Rhesus</i>	?		X	886–982 (or 996) – Muse appears, possibly with dummy body of Rhesus	X
Euripides	<i>Suppliant Women</i>	423?	X		980–1071 – Evadne on roof for suicide	

Likely (10)

Author	Play	Date	<i>Skēnē</i> Roof	Crane	Roof or Crane	Passage(s)	Differs from Mastronarde
Aeschylus	<i>Eumenides</i>	458	X			64–93 (or until 234, or with reappearance 179–234) – Apollo at Delphi	X
Euripides	<i>Bacchae</i>	Post-405			X	1330–1351 (or 1392) – Dionysos at conclusion	X
Euripides	<i>Hekuba</i>	424?	X			1–58 – Polydoros prologue	X

Euripides	<i>Helen</i>	412		X	1642–1687 – Kastor and Polydeukes at conclusion	X
Euripides	<i>Hippolytos</i>	428	X		1–57 – Aphrodite prologue	X
Euripides	<i>Hippolytos</i>	428		X	1283–1439 – Artemis at conclusion	X
Euripides	<i>Medea</i>	431		X	1317–1414 – Medea departure	X
Euripides (?)	<i>Rhesus</i>	?		X	595–674 – Athena appears	X
Sophokles	<i>Ajax</i>	Ca. 450?	X		1–133 – Athena in prologue	X
Sophokles	<i>Philoktetes</i>	409		X	1409–1471 – Herakles at conclusion	X

Possible (9)

Author	Play	Date	<i>Skēnē</i> Roof	Crane	Roof or Crane	Passage(s)	Differs from Mastronarde
Aeschylus	<i>Eumenides</i>	458	X			94–139 – Klytemnestra rousing Furies	X
Aeschylus	<i>Eumenides</i>	458	X			397–489 and 566–end – Athena overseeing court	X

Aeschylus	<i>Persians</i>	472	X		681–842 – ghost of Darius	
Euripides	<i>Alcestis</i>	438	X		1–71 – Apollo prologue	X
Euripides	<i>Bacchae</i>	Post-405	X		1–63 – Dionysos prologue	X
Euripides	<i>Ion</i>	Ca. 413?	X		1–81 – Hermes prologue	X
Euripides	<i>Iphigenia among the Taurians</i>	Post-414?		X	1435–1499 – Athena at conclusion	X
Euripides	<i>Suppliant Women</i>	423?		X	1183–1234 – Athena at conclusion	X
Euripides	<i>Trojan Women</i>	415	X		1–97 – Athena and Poseidon prologue	X

Of the 33 extant tragic plays surveyed, there is only a single play for which the *mēchanē* must have been used: Euripides' *Orestes*. The staging of the final scene of the play requires action occurring on three distinct spatial planes and such a tripartite separation is emphasized in the language used by the actors: orchestra (where Menelaos and the chorus stand), *skēnē* roof (where Orestes, Pylades, Hermione, and perhaps Elektra stand, threatening to break the roof), and the *mēchanē* (where Apollo, and perhaps a dummy Helen, hover). This is the only play for which a crane would have been a necessary piece of stage equipment.

There are four plays where the *skēnē* roof must have been used: Aeschylus' *Agamemnon* (staged 458), Euripides' *Suppliants* (staged late 420s), Euripides' *Phoenician Women* (staged 411, 410, or 409), and Euripides' *Orestes* (staged 408).¹⁸ The situation at the end of *Orestes*, discussed above, and the other three instances are straightforward. In the opening of *Agamemnon*, the night watchman makes explicit reference to the roof of the house (στέγαις, 3) and it seems certain that the actor delivered his opening monologue from the roof.¹⁹ Similarly, in *Phoenician Women*, Antigone and her nurse ascend to the roof to look at the gathering troops and their language makes it clear they have climbed a ladder (κέδρου παλαιὰν κλίμακ', 100; ἀπὸ κλιμάκων, 104) to the topmost room of the house (μελάνθρων ἐς διήρες ἔσχατον, 90). In *Suppliants*, Evadne appears on the *skēnē* roof in order to leap to her death; the chorus wonder why she stands on a high cliff towering over the temple (τί ποτ' αἰθερίαν ἔστηκε πέτραν / ἧ τῶνδε δόμων ὑπερακρίζει, / τήνδ' ἐμβαίνουσα κέλευθον, 987–989) and when her father comes looking for her, she says she is like a

¹⁸ Dates taken from the following relevant commentaries: Aeschylus, *Agamemnon* (Raeburn and Thomas, *The Agamemnon of Aeschylus*, xv); Euripides, *Suppliants* (Collard, *Aeschylus: Persians and Other Plays*, xxxvi; Storey, *Euripides: Suppliant Women*, 12–3); Euripides, *Phoenician Women* (Mastrorade, *Euripides, Phoenissae*, 11–4); Euripides, *Orestes* (Wright, *Euripides: Orestes*, 9).

¹⁹ It is, of course, possible (if unlikely) that the actor could have delivered his lines from the orchestra, standing in front of the *skēnē* and gesturing towards it, but such a staging would decrease the resonance of the lines and the way they (and the actor's position on the roof) underscore the centrality of the *skēnē-oikos* for the play; see, in particular, Sourvinou-Inwood, *Tragedy and Athenian Religion*, 246–50.

bird, perched on a rock above the pyre of Kapaneus (ἦδ' ἐγὼ πέτρας ἔπι / ὄρνις τις ὥσει Καπανέως ὑπὲρ πυρᾶς / δύστηνον αἰώρημα κουφίζω, πάτερ, 1045–1047). In these four examples, it is clear that the actors are meant to be on the *skēnē* roof. The language necessitates a distinct spatial plane, separate from the orchestra and elevated, but does not require a crane.

The remaining examples from Table 1 could have featured actors appearing either on the *skēnē* roof or lifted via the crane. This analysis yields 12 instances where either the roof or the crane *must* have been employed (counting *Prometheus Bound* and *Orestes* twice, because they have two distinct appearances of actors on high), an additional 10 instances where such an elevated venue was *likely* used, and 9 instances where this staging was *possibly* used. Approximately 70% of the time, a play will either require or strongly imply an elevated staging.²⁰

The Evidence: Archaeology

Before unpacking the implications behind this textual evidence, it is instructive to survey briefly the remains of the mid-5th-c. Theater of Dionysos in order to ground the initial stagings of these plays in their archaeological context. The general paucity of physical evidence and overreliance on later phases of the theater, as well as later theaters elsewhere, has frequently led to confusion and exaggeration of what the theater may have looked like in its earliest phases. The account below is not meant to be exhaustive but summarizes the latest information and points towards reconstructions of higher likelihood.²¹

²⁰ Likelihood that a play will require an elevated staging: ca. 36.36%; will likely use an elevated staging: ca. 30.3%; could possibly use an elevated staging: 27.27% (all percentages calculated against 33 plays).

²¹ The bibliography for the Theater of Dionysos (and Greek theaters in general) is immense and this is not the venue for a full account. Pertinent and relatively recent publications, each with extensive bibliography, include Wiles, *Tragedy in Athens*; Moretti, “The Theater of the Sanctuary of Dionysus Eleutherius;” Todisco, *Teatro e spettacolo in Magna Grecia*; Rehm, *The Play of Space*; Csapo, “The Men Who Built the Theatres;” Senseney, *The Art of Building in the Classical World*; Papastamati-von Moock, “The Theatre of Dionysus Eleuthereus in Athens;” the collected essays in Frederiksen, Gebhard, and

Regardless of whether the theater on the south slope of the Akropolis was built under the Peisistratidai (3rd – early 4th quarter of the 6th-c.) or under the nascent democracy (late 6th-c.), it must have been well-established in that location by the end of the Persian Wars: the earliest extant tragedy, Aeschylus' *Persians* of 472, was surely staged there during the Great Dionysia.²² Recent archaeological work indicates that some elements of the theater may have been rendered in stone in the 2nd half of the 5th-c., including parts of the *theatron* and a retaining wall for the orchestra, and it remains tantalizing to associate these elements with Perikles.²³ There is no firm evidence for a permanent stone *skēnē*, however, until the Lykourgan phase of the theater in the 4th-c.²⁴ Similarly, there is

Sokoliceck, *The Architecture of the Ancient Greek Theatre* (particularly the essay by Papastamati-von Moock); Paga, "The Greek Theater;" Pöhlmann, "New Arguments for a Skene Building in Early Greek Tragedy;" Papastamati-von Moock, "To "θέατρο των μεγάλων τραγικών," and "Auf der Suche nach dem "Theater der Tragiker."

²² A Peisistratid date is proposed, among others, by Pickard-Cambridge, *The Theatre of Dionysos in Athens*, 3–4; Shapiro, *Art and Cult under the Tyrants in Athens*, 85–7. A date closer to 500 is proposed, among others, by Connor, "City Dionysia and Athenian Democracy;" Despinis, "Il tempio arcaico di Dioniso Eleuterio," 212–13; Paga, *Building Democracy in Late Archaic Athens*, 145–9. Papastamati-von Moock argues for a date in the later part of the 6th-c. but does not explicitly connect the theater with the tyrants or democracy ("The Wooden theatre of Dionysos Eleuthereus in Athens," 43–4).

²³ Papastamati-von Moock ("The Theatre of Dionysos Eleuthereus in Athens," 33–4, 60–72; argued especially in "The Wooden theatre of Dionysos Eleuthereus in Athens," brought together with an extensive historiographical account of the theater in "To "θέατρο των μεγάλων τραγικών;" "Auf der Suche nach dem "Theater der Tragiker"") makes a strong case for a partially completed Periklean phase of the theater; less convincing is her belief that this is when the circular orchestra was introduced (compare arguments against a circular orchestra in the 5th-c. adduced by Rehm, *The Play of Space*, 39–41 and 315, n. 17). As is clear in Figure 1, I favor a rectilinear design for the orchestra prior to the 4th-c., although the precise shape is not crucial to the present argument. For a reconstruction of the theater that does not include a Periklean phase, see Goette in Csapo "The Men Who Built the Theatres," 116–21 (written prior to the most recent excavations).

²⁴ Pöhlmann offers a strong argument for the existence of a wooden *skēnē* from a very early period ("New Arguments for a Skene Building in Early Greek Tragedy"), in contrast to those who prefer to date the *skēnē* no earlier

no evidence for a central altar within the orchestra or any other permanent features in the 5th-c.²⁵ The Temple of Dionysos, built ca. 500, damaged or destroyed by the Persians, remained spatially tangential, although its condition and appearance following the Persian destruction remains unclear; it was sufficiently rehabilitated to house the cult statue until the construction of the new temple in

than the performance of the *Oresteia* in 458 (e.g. Wilamowitz “Die Bühne des Aischylos;” followed by Taplin, *The Stagecraft of Aeschylus*, and many others, including Ley, *The Theatricality of Greek Tragedy*). Townsend, “The Fourth-Century Skene of the Theater of Dionysos at Athens,” remains the most thorough account of the creation of a permanent *skēnē* in the 4th-c. but see criticisms and updated proposals by Papastamati-von Moock, “The Theatre of Dionysus Eleuthereus in Athens” (esp. 60–2), “The Wooden theatre of Dionysos Eleuthereus in Athens,” “To “θέατρο των μεγάλων τραγικών.” Papastamati-von Moock has proposed that the back wall of the *skēnē* (usually referred to as H-H), including edifice T, which was bonded with it, can be dated to her proposed Periklean phase (most strongly stated in “The Wooden theatre of Dionysos Eleuthereus in Athens,” 45–8, 62–71). The dating for this wall, and thus T, however, is principally based on the use of conglomerate stone, the employment of which in Athens and Attika has comparanda from the 2nd half of the 5th-c. onwards; that said, there are relatively few comparanda before ca. 400, so while that makes it possible that the rear *skēnē* foundations were begun in stone during the 2nd half of the 5th-c., it does not necessitate it. Even if Papastamati-von Moock is correct, however, that wall H-H and edifice T are from the 2nd half of the 5th-c., it remains true that the rest of the foundations and the superstructure were not completed in stone until the later 4th-c., so any 5th-c. *skēnē* must have retained a largely wooden (or wood and mudbrick) form.

²⁵ For arguments against a central altar within the orchestra, see Rehm, *The Play of Space*, 41. Poe, while attempting to disprove the idea of a permanent altar, still maintains the notion that an altar of some sort was usually, if not always, present (“The Altar in the Fifth-Century Theater”). A large, permanent altar in the middle of the orchestra would have left archaeological traces (of which there are none) and would have hindered the movements of the chorus. If it had a form as monumental as some have proposed, it would have blocked views for some portion of the audience (cf. Wilamowitz, *Euripides: Ion*). If it was a functioning altar (as is often assumed by those who place it in the orchestra), the actors would not have stood on it, as this would flout religious custom and potentially be a form of sacrilege (cf. Poe, “The Altar in the Fifth-Century Theater,” 118). For the evidence for and against an altar in the theater, and its role in dramatic performance more generally, see Ashby, *Classical Greek Theatre*, 42–59.

the late 5th or 4th-c. (generally associated with the installation of a new cult statue by Alkamenes). There was also an altar of the god located further south in the sanctuary (Fig. 1).

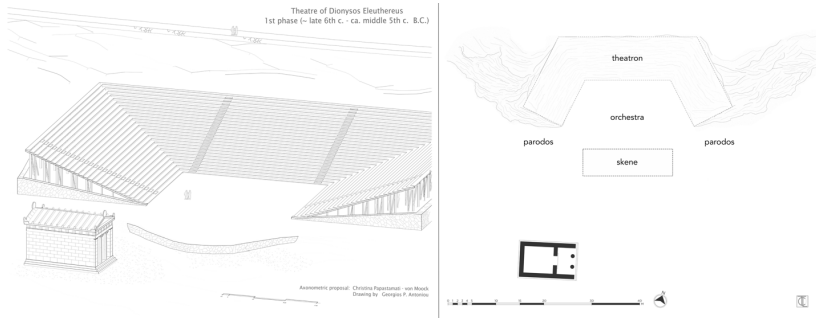


Figure 1a: Proposed reconstruction of the wooden theater and the old temple of Dionysos Eleuthereus, first phase (~late 6th – ca. mid-5th-century BCE): Chr. Papastamati-von Moock, drawn by G. P. Antoniou (from Papastamati-von Moock, “The Theatre of Dionysos Eleuthereus in Athens,” fig. 18; reproduced with permission); 1b: Plan of the Sanctuary of Dionysos, ca. 480, with temporary *skēnē* (drawing by C. Lightfoot, modified by author).

In short, the theater of Dionysos during the time of Aeschylus, Sophokles, and Euripides was a relatively plain edifice. The natural slope of the hillside was used for seating, likely on a mixture of wooden bleachers (*ikria*) and the hill itself. The orchestra floor was beaten earth supported by a polygonal stone retaining wall. The *skēnē* was wooden, likely rectangular, and relatively simple,²⁶ erected anew each year for the Great Dionysia festival in Elaphebolion (March/April).²⁷ The *skēnē* had a single door but additional doors

²⁶ All of the earliest stone *skēnai* are rectangular: Soluntum (ca. 350), Priene (ca. 340); Oropos (4th-c.); Athens (with projecting *paraskēnia* wings, 338–326). The *skēnē* certainly had a flat roof to support the actors on top of it and to streamline the construction process (contra Ashby, *Classical Greek Theatre*, 88–9, who posits a sloped roof; contra Chondros, “Deus-Ex-Machina Reconstruction and Dynamics,” 94, fig. 7, and Chondros et al., “‘Deus-Ex-Machina’ Reconstruction in the Athens Theater of Dionysus,” 181, fig. 7, and 187, fig. 15 where the *skēnē* is shown with a false pediment).

²⁷ For the construction and economic implications of such wooden elements, see Csapo, “The Men Who Built the Theatres,” he also points out

could have been added if dramatically needed and if the *skēnē* was long enough, such as appeared in the subsequent stone *skēnē* of the 4th-c. and in some other Hellenistic stone *skēnai*.²⁸ A modest temple to the god and altar lay further south, and the sanctuary likely had areas for additional votive dedications, basins for lustral water, and perhaps a temenos wall or peribolos.

Roof or Crane?

Given the evidence detailed above, the lingering question is why an actor, playwright, or *chorēgos* might favor a staging solely using the orchestra or move the action to either the *skēnē* roof or the crane (and if the former, why the roof and not the crane).²⁹ Mastronarde has already provided an answer to the question of why a playwright or director might employ an elevated staging. In his formulation, the placement of actors “on high” (either on the *skēnē* roof or lifted via the crane) creates a spatial distinction between the realm of humans and the realm of mortals.³⁰ Since most figures appearing on high are gods, their physical elevation above the orchestra reifies their celestial status and provides a physical break between realms of existence.

The creation of a spatial disjunction between the realm of mortals (orchestra) and the realm of the gods (*skēnē* roof and crane) is both complicated and augmented by the occasional appearance of

the temporal nature of wooden structures left outside and the subsequent necessity for replacement (103–8).

²⁸ There is not a single 5th-c. tragedy for which the *skēnē* needed more than one door (for comedy’s slightly different requirements, although still favoring a singular door for most stagings of Aristophanes, see Lowe, “Aristophanic spacecraft”).

²⁹ It remains unclear, particularly in the 5th-c. prior to the appearance of professional acting guilds, how much agency an actor may have had in the staging of a play (could an actor scared of heights, for instance, argue for a staging solely on the orchestra level or would he have to obey the directions provided by the playwright or *chorēgos*?).

³⁰ Mastronarde, “Actors on High.” See also Wiles regarding what he terms the “vertical axis” for expressions of divine power (*Tragedy in Athens*, 181–6) and Rehm for a spatial reading of the Theater of the Dionysos within its tragic performative context (*The Play of Space*, 35–62).

mortals on the roof. Indeed, the four plays discussed above that necessitate an elevated staging on the *skēnē* roof are all times when mortals appear on high, breaking the divine-mortal plane. Notably, in all four cases, the figures use specific language that explains *why* the mortals are entering the realm of the gods: for a mortal to appear on high, a clear reason must be offered. On the other hand, when a god appears on high, no explanation is needed because it is their natural realm. Such compulsion for explanation in the case of humans – and the general lack of it in the case of divinities – underscores Mastronarde’s argument about the spatial distinction between gods and mortals and highlights how the physical space of the theater worked to create such a separation. Yet it remains to consider when and, more importantly, why the *skēnē* roof might have been favored over the crane (and vice-versa) and how such elevated settings worked to supplement the divine transformations within the plays, an aspect of staging not of central importance in Mastronarde’s analysis.³¹ In what follows, various factors are considered that may have played a role (either individually or, more likely, in tandem) in this decision: economic or budgetary concerns, safety risks, and the attempt to evoke awe or wonder.

In economic terms, it would have been cheaper and more cost effective to have elevated stagings on the *skēnē* roof. The ephemeral wooden *skēnē* would be present within the theatral space and the

³¹ A chronological argument for preferencing the *skēnē* roof over the crane is not possible. Architectural evidence – lewis cuttings, notches for lifting tongs, and projecting lifting bosses – indicates that cranes were used in monumental stone construction by the last quarter of the 6th-c., if not earlier (Coulton, *Ancient Greek Architects at Work*, 48, 144–5; Wilson, “Machines in Greek and Roman Technology,” 342; Pierattini, “Early Greek Stone Construction and the Invention of the Crane”). This crane, familiar from construction contexts, is certainly the same type of device employed in the theater as the *mēchanē*. The theater crane would have been built on a reduced scale from that used in monumental construction sites, and because it was used for more lightweight objects (human actors, one at a time), could be of a relatively simple design (contra Chondros, “Deus-Ex-Machina Reconstruction and Dynamics;” Chondros et al., “‘Deus-Ex-Machina’ Reconstruction in the Athens Theater of Dionysus”) and without the multiple posts and pulleys needed to lift, for example, an epistyle block weighing several tons; either a monopod or bipod crane would likely suffice (see further discussion below).

playwright could assume its availability, thus envisioning a staging in which its roof could be used without any additional costs or labor.³² The use of a crane, on the other hand, represented an additional expenditure, albeit a modest one, and one that was not a necessary feature in the way the *skēnē* was: the crane was also non-permanent, but unlike the stage building, the playwright could not assume that it would be present. In addition, the crane required timber, rope, and metal parts, and a construction crew to build, man, and dismantle it.³³ Based on epigraphic references to woodworking and carpentry, the total cost for the materials, erection, and manning of the crane was likely between 30 and 50 drachmas.³⁴ These costs

³² For the finances and economic impact of the Greek theater in the 4th-c., see Csapo, “The Men Who Built the Theatres;” Csapo and Wilson, “The Finance and Organization of the Athenian Theatre in the Time of Eubulus and Lycurgus.”

³³ In addition to vertical wooden beams for upright stability and the horizontal beam (often referred to as the “finger”), the crane would have needed metal flanges or fasteners and rope for the pulley mechanism; a windlass may have been used, but was likely unnecessary, given the lightweight nature of a human actor (contra Chondros et al., “‘Deus-Ex-Machina’ Reconstruction in the Athens Theater of Dionysus”). A leather or fiber harness, secured to the rope and extended beam with hooks or ties, should also be reconstructed, or (less likely) additional wooden elements for a trapeze arrangement.

³⁴ On the basis of *IG II² 1176* (lease of deme theater at Piraeus), it cost around 3,000 drachmas in 324/3 to outfit the theater with a stage building (unclear if in wood or stone), *prohedria*, wooden seats, and general preparation of the theater for dramatic performance; we must imagine that the majority of this cost went towards landscape and hardscape elements of shaping the area, and any stone construction of retaining walls, *prohedria*, and possible stone *skēnē*. From the Erechtheion building accounts, we learn that wooden boards (*sanides*) for writing up lists cost just 1 drachma each (*IG I³ 476*, 188–192), although it is unclear how large these boards were. In the decree of the Salaminioi from 363/2 (RO 37, *SEG* 21.527), wood for sacrifices “and other things” ranges from 3–10 drachmas. Labor costs (omitting the carving of sculpture) from the Erechtheion accounts suggests a wage of approximately 12–20 drachmas for fluting a stone column, a task involving some degree of skill and knowledge of stone working (*IG I³ 476*, 192–248); it is assumed that stone workers were more highly paid than carpenters. My estimate for the wooden crane is based on the lower costs of wooden boards and sacrificial wood, the likely cheap cost of rope, the small amount of metal required, and the approximate labor costs for a team of 2–3 men to build and operate the

may have been shared across *chorēgoi* or shouldered by the *chorēgos* of the particular play(s) in which it would be used; alternately, the crane (and any additional props and machinery) could have been provided by the supervising archon, as was the *skēnē* itself.³⁵ Even if we take Lysias at his word that a *chorēgos* might be expected to spend 3,000 drachmas (21.1), the crane nevertheless represents an additional cost and, if elevated stagings on the *skēnē* roof were acceptable, an expenditure that could easily be cut.

Beyond cost effectiveness, the *skēnē* roof might have been preferred for its ease and safety.³⁶ Its use required no additional machinery, crews, or construction. A ladder could be easily procured for access and a trapdoor cut into the roof as part of its initial construction. Access on and off the roof is straightforward and would not be time-consuming or complicated for the actors (even while wearing costumes and masks), as compared to the harness and straps likely required for the crane. If needed, more than one ladder could be used (one inside the *skēnē* and another against its back wall, for instance) at minimal additional cost and without changes to the basic *skēnē* construction itself. Using a ladder requires no specialized knowledge and would have been a familiar means of accessing overhead spaces. The overall ease of using the *skēnē* roof makes it a favorable option.

That the crane was potentially unsafe is made clear by its paro-

device over the course of the festival.

³⁵ As Wilson notes, the *chorēgoi* were responsible for the needs of the performance, including masks and costumes, and it is not unreasonable to think that this would have also included props and machinery, since all of these elements go towards the conspicuous consumption of resources and creation of spectacle, by which a *chorēgos* attempted to leave his mark and secure victory (*The Athenian Institution of the Khoregia*, 71, 86–7). On the other hand, a reader has suggested that the crane used to construct the *skēnē* could be reused for the performances; while possible, it is not clear that the relatively small, wooden *skēnē* would require the use of a crane (a construction device generally reserved for stone structures), and, if it did, if that crane would then be suitable for dramatic stagings.

³⁶ The following account of accessibility is predicated on the assumption that actors were adults with no mobility limitations. While ancient Greeks may not have had the same concern for job safety that exists today, it is discussed here as one potential factor in staging choice.

died use in Aristophanes' *Peace*. As Trygaeus is lifted into the air on a dung beetle, he shouts to the crane operator (*mēchanopoios*) to be careful because he can feel wind around his navel and he does not want to end up being food for his beetle, seemingly a reference to a swinging crane or twisting harness that is moving wildly and that threatens to toss him to the ground (ὦ μηχανοποιέ, πρόσεχε τὸν νοῦν, ὥς ἐμὲ ἢ δὴ στρέφει τι πνεῦμα περὶ τὸν ὀμφαλόν, ἢ καὶ μὴ φυλάξεις, χορτάσω τὸν κύνθαρον, 174–176).³⁷ The comedic reference suggests the reality of such an occurrence. If it was a windy day (as early spring days in Athens frequently are) or the actor needed to do much gesturing, the instability and lack of balance on the crane would have increased. Although it probably did not raise them more than a few meters into the air, an actor could still suffer real harm if the crane broke or harness became loose. Beyond safety, the unpredictable swings, bulky harness, sounds of creaking wood and straining crew members also made the crane a potential point of distraction, breaking the audience out of their attention to the play by drawing their notice to the mechanics of its production.³⁸

If the playwright or producer wanted an actor to appear on high

³⁷ For the allusions to nausea and diarrhea, see Olson's commentary (*Aristophanes: Peace*, 100–1). Other comedic references to the crane and its operations are discussed in Perrone, "Effetti Comici a bordo di un Ramo di Fico."

³⁸ The unpredictability of the crane and its potential impact on staging and theatrical illusion in Attic comedy is incisively considered by Scott, who comments particularly on the "precariousness of theatrical illusion in live performance" ("Flying too Close to the Sun," 2). For Scott, the erratic swinging of the crane reflects the real difficulties of this technology, with the parody of the device in *Peace* exaggerating what was surely a real issue (9–10). For the difficulties in staging this scene from *Peace*, see also Slater, *Spectator Politics*, 116–19; Hall, "The Theatrical Cast of Athens," 324–5; Lowe, "Aristophanic spacecraft," 61–3. On the other hand, Bur argues that the visible workings of the crane aided in its creation of spectacle (*Technologies of the Marvellous in Ancient Greek Religion*, 38–40). I agree with Bur that the visibility of the crane was not the major "problem" it is often assumed to be by modern scholars (see, for example, Möllendorf, "Technologies of Performance," 220, fn. 19, who wants the crane to be completely hidden so that its use could "surprise" the audience). In broad daylight and in the open design of the theater, how much of a "surprise" could anything truly be?

and move around, then the best staging would be on the *skēnē* roof. Given the mechanics of crane design and likely make-up of the harness (discussed below), the fantastic staging sometimes imagined of an actor being lifted, swooped through the air, and then set down on the *skēnē* roof, or – even more unlikely – in the orchestra, is just that: a fanciful bit of modern imagination. If we understand that the crane was located at ground level behind the *skēnē* and that actors appearing via the crane were always lifted from this rear position, it would be mechanically impossible for a counterbalanced swing-beam to lift an actor from behind the *skēnē*, rotate 90°, and then deposit him in the orchestra: the *skēnē* itself gets in the way, unless we reconstruct a crane several meters taller than the *skēnē*, at which point large parts of the device would have been always visible to the audience and the crane itself would become bulkier and require more men to operate it. A bipod crane, on the other hand, may have had the capacity to lower an actor from a high position down into the orchestra level, but would have severely limited lateral maneuverability (unless a windlass was also employed) and, depending on the spacing of the bracing beams, might not even have the horizontal range to lift an actor from behind the *skēnē* and swing him towards the front (Fig. 2).³⁹

³⁹ The bipod crane restored on edifice T at the rear wall of the *skēnē* by Papastamati-von Moock, for instance, could not lift an actor up from behind the *skēnē* (see “The Theatre of Dionysus Eleuthereus in Athens,” 71, fig. 1.42; reproduced in “Το θέατρο των μεγάλων τραγικών,” 74, fig. 23, and a different angle without the later stoa shown in “Το θέατρο των μεγάλων τραγικών,” 84, fig. 24). In her reconstruction prior to the stoa, the slightly elevated rear of the *skēnē* and the mechanism of the crane itself would prevent the device from raising an actor from behind the *skēnē*; once the stoa was installed, a permanent crane on edifice T becomes even more problematic: from where would the actor be lifted? Indeed, once the permanent *skēnē* and stoa were built, the position and working of the crane become even more problematic. A reader suggested that the form of the crane might have changed year to year depending on dramatic necessities. I find this idea interesting, but there are only so many configurations of cranes that would be functional within the physical and literary environment of tragic performance in the Theater of Dionysos, so such technical and formal variation was likely limited. For the mechanics of a monopod theater crane, see Lendle, “Überlegungen zum Bühnenkran,” for a bipod crane, see Papastamati-von Moock, “The Theatre

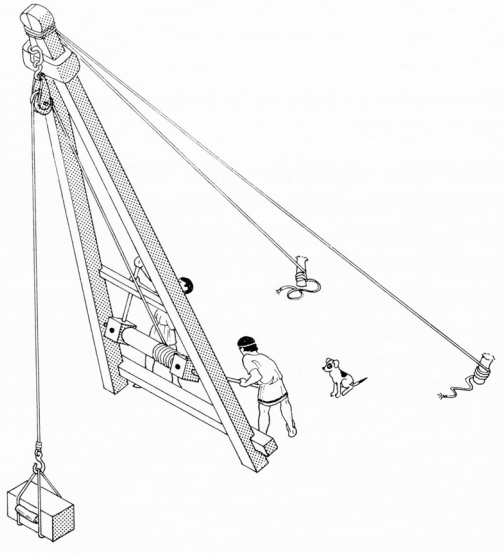


Figure 2: Ancient A-frame crane (a type of bipod crane) with winch, based on wall painting from the Villa San Marco at Stabiae (note the lack of lateral moveability) (from Adam, *La construction romaine*, fig. 89), © JP Adam.

If we want to envision a scenario wherein an actor is lifted by the crane, alights on the *skēnē* roof, gets out of their harness, delivers their scene, then hooks themselves back into the harness to be lifted up and behind the *skēnē*, we now must factor in the time and distraction of harness-wrangling, itself a suspension of the play's performative nature,⁴⁰ and an increased possibility of improper and

of Dionysus Eleuthereus in Athens," 65–72; for a mechanically sound but contextually flawed model (and one that only works if a windlass is added), see Chondros, "Deus-Ex-Machina Reconstruction and Dynamics," and Chondros et al., "'Deus-Ex-Machina' Reconstruction in the Athens Theater of Dionysus." The crane proposed by Ashby (*Classical Greek Theatre*, 85–6 and fig. 44) is simple to construct and use, could easily lift an actor and a prop steed (when/if needed), and has sufficient range of motion. As proposed, however, it would not have cleared the *skēnē* roof, thus making it impossible to employ, and it would still have the problems of balance, instability, and harness-wrangling.

⁴⁰ The suspension of belief in 5th-c. performance is a tricky issue, but unlike, for instance, the exaggerated masks (which were donned prior to

unsafe harnessing for the actor. Even if the scene does not call for the actor to be removed back through the air (the actor is lifted up via the crane, alights on the roof, and stays there for the remainder of the play), we are still faced with the problem of getting the actor out of the harness and retracting the crane out of view. Moreover, there is not sufficient evidence that ancient Greek cranes had a significant degree of lateral range of motion; they could raise and lower objects but only move them a short distance side to side, certainly not from one side of the orchestra to the other. In short, we would be wise to reject any proposed stagings that involve an actor “alighting” or “swooping.”⁴¹

In sum, in terms of cost, ease, and safety, using the *skēnē* roof for elevated stagings has much to recommend it over the crane and we should suppose that it was used for the majority of instances of actors on high, at least during the initial performance of plays in the 5th-c., prior to the erection of a permanent and more elaborate *skēnē*, and possible permanent crane.⁴² Even after the petrification

appearing and not removed during the actor’s time on stage), unbuckling and buckling a harness in full view of the audience pointedly draws attention to an extraneous mechanism outside the dramaturgical events of the play; the crane suggested by Ashby, for instance, requires a “suspending harness of three or four ropes,” which would be tricky to unstrap and strap by oneself, especially while wearing a large mask (*Classical Greek Theatre*, 86). A trapeze arrangement would mitigate many of the harness-wrangling concerns but would drastically increase the balance and instability issues for non-professional actors and would also limit the actor’s ability to gesticulate while being lifted (or their ability to hold a prop steed or dummy), since they would need to grasp the ropes for balance (see sketch in Mastronarde, “Actors on High,” 293, with actor holding vertical ropes in a trapeze arrangement). Note also Bur’s idea that the visibility of the crane’s mechanism was not a problem but rather aided in the creation of ontological significance (*Technologies of the Marvelous in Ancient Greek Religion*, 31–3).

⁴¹ With the growth of professional actor guilds in the 4th-c., some of these problems could have been partially resolved. In terms of the harness, for example, an experienced actor may have enough training to buckle himself in and out with relative ease, as opposed to the average Athenian citizen in the initial stagings in the 5th-c. The basic mechanical operation of the crane, however, remains the same, including its limitations.

⁴² Although Papastamati-von Moock’s interpretation of edifice T as a base for the permanent installation of a crane is a testament to her keen

of the *skēnē*, in Athens and elsewhere, in the 4th-c., using the *skēnē* roof instead of the crane may have still been preferred in many cases (for instance, if a local or regional theater lacked suitable provisions for a crane). But there were surely times when a playwright or producer insisted on using the crane, despite these potential issues and concerns. Why?

For a *chorēgos*, the point of sponsoring a play was to display wealth and publicly perform a liturgy within the acknowledged sphere of elite conspicuous consumption that dominated the Athenian upper classes in the 5th-c.⁴³ A *chorēgos* who wanted his wealth to be clearly broadcast might have accomplished this by spending extra money on a crane and crew, if such a staging on high was plausible within the context of the plays. A crane added to the overall spectacle with its eye-catching lifting of actors and its relative extravagance could have been interpreted as a signal of wealth. The potential danger of the crane may have also played into this, as an observant audience could have favorably acknowledged a *chorēgos* willing to take a risk for extra pizzazz. The use of the crane in situations where the *skēnē* roof could have sufficed may also represent a general delight in new technologies and the spectacular stagings they offered.⁴⁴ It

observational prowess, several questions linger: was such a base necessary for the relatively lightweight crane likely employed for the theater; when does edifice T date to (dates range from 1st half 5th-c. to late 4th-c.); why was a crane considered a necessary permanent feature; how would this crane have operated once the stoa was built. For the issue of edifice T, see discussion above and Pickard-Cambridge, *The Theatre of Dionysos in Athens*, 128; Polacco, *Il Teatro Di Dioniso Eleutereo Ad Atene*, 65–6; Papastamati-von Moock, “The Wooden theatre of Dionysos Eleuthereus in Athens,” esp. 67–71. For possible evidence for permanent crane installations in other theaters, see the case of Phlius (Biers, “The Theater at Phlius,” 62–5).

⁴³ Wilson, *The Athenian Institution of the Khoregia*. As discussed above, it is also possible that the cost of the crane and operating crew was shared across *chorēgoi*, if the device was used in more than one tetralogy, which would lessen the singular impact of its extravagance but also spread the spectacle across the three tetralogies.

⁴⁴ The delight in the novel is also evidenced in Amphis, *Dithyrambos* (KA 14 = Athen. IV), where the characters discuss the agonistic advantages of a fashionable new musical instrument, the *gingas* (I thank an anonymous reader for this reference). For a strong argument in favor the crane’s mechanical

is precisely this love of the spectacular that Aristotle warns against but which must have been tantalizing, especially for a *chorēgos* aiming at first place or a playwright hoping to trounce his competitors. Here, the desire for extravagant display and delight in the new coalesce into a sense of the spectacular on stage.

But it is important to keep in mind that the choice to use the crane, in all but one case (Eur., *Or.*), was just that: a choice, rather than a necessity or precondition for production. When we envision the original stagings for these plays, it is tempting to make them as visually spectacular as possible, with swooping cranes and dangling actors flying across the sky. The reality, however, was likely far simpler and involved actors climbing up to the *skēnē* roof via a ladder. But by suggesting a reduction in how frequently the *mēchanē* may have been used, the door is opened to consideration of alternate staging possibilities. Rather than siloing most divine appearances as *deus ex machina* episodes (and thereby focusing attention on them as a plot device), we can instead envision different types of stagings. This is particularly important for considerations of restaging or reperformance outside of Athens, in theaters that may not have ready access to a crane and its operators, and in smaller, regional theaters. Thinking about divine appearances beyond the *mēchanē* reduces the restrictions that such a machine imposes, thereby allowing a richer reading of the plays that is aligned with the physical realities of the theater.

Divine Transformation in Text and on Stage

One of the fundamental problems of the early Athenian theater was how to transform a rectangular wooden box (the *skēnē*) into a resonant edifice (a temple, a palace), without the use of lighting, rigging, or even permanent architecture. While painted panels (*skēnographia*)⁴⁵ and temporary props may have helped to “set the

ability to produce awe, see Bur, *Technologies of the Marvellous in Ancient Greek Religion* (although without sufficient consideration of the archaeological evidence for the theater and crane).

⁴⁵ Arist. *Poet.* 1449a; Vitruvius, *De arch.* VII praef. 11. See Davidson for an argument in favor of painted panels, rather than a painted *skēnē* façade (“Theatrical Production,” 203). For a generally skeptical discussion of

stage,” the transformation ultimately relied on the plays themselves and the willingness of the audience to stretch their imaginations. Despite the fact that tragedies overwhelming used the heroic and mythical past as their settings, the evocation of the divine could be particularly tricky, as spectators were asked to accept the reality of a human actor impersonating a divine being, yet another transformation.⁴⁶ In plays with entirely divine casts, such as *Prometheus Bound*, this was perhaps not a serious hurdle: every actor (and chorus member) was understood to be portraying a supernatural being. In plays that took place in sanctuaries, the prologue could be used to immediately alert the audience as to the divine setting and thus the appearance of an actor playing a god would not be unexpected.⁴⁷

The use of differing elevations to communicate the status of the portrayed figures further worked to visually effect these transformations by reifying the expectation of immortal ascendance. Elevated sightings of gods were familiar experiences in Greek sanctuaries, where worshippers would commonly encounter statues of gods in temple pediments and see over-life size dedicatory and cult statues.⁴⁸ The ritual expectation of gods looming overhead in the context

skēnographia, see Small, “Skenographia in Brief” (with earlier bibliography).

⁴⁶ On this phenomenon more generally in the theater, see Budelmann, “Belief, Make-Believe, and the Religious Imagination;” with specific attention to the *opsis* of scene design, masks, and costumes, see Gianvittorio-Ungar, *Narratives at Play in Aeschylus*, 57–8; for related rituals of divine epiphany in sanctuaries, see Petridou, *Divine Epiphany in Greek Literature and Culture*, 43–9.

⁴⁷ In the case of *Ion*, both elements are achieved within the first lines, as Hermes introduces himself as a god and identifies the setting as the sanctuary of Apollo at Delphi: Ἄτλας ὁ νότοις χαλκείοισιν οὐρανόν, / θεῶν παλαιὸν οἶκον, ἐκτρίβων θεῶν / μιᾶς ἔφρυσε Μαῖαν, ἧ' μ' ἐγείνατο / Ἑρμῆν μεγίστῳ Ζηνί, δαιμόνων λάτριν. / ἦκω δὲ Δελφῶν τήνδε γῆν, ἵν' ὀμφαλὸν / μέσον καθίζων Φοῖβος ὑμνοῦδεῖ βροτοῖς / τά τ' ὄντα καὶ μέλλοντα θεσπίζων ἀεί (1–7) (“Atlas, who with his bronze back wears out the heavens, the ancient home of the gods, bore Maia by one of the goddesses, who bore me, Hermes, servant of the gods, to great Zeus. I have come to this land here, Delphi, where Phoibos, sitting on the central omphalos, forever prophesizes to mortals the things that are and that will be”). There could be no doubts in the audience’s mind as to what, where, and who they were observing.

⁴⁸ The links between viewing statues of gods in the sanctuary and representations of gods in the theater is fully explored in Paga, forthcoming.

of the sanctuary was translated in the theater through the use of the *skēnē* roof and mechanism of the crane. As Sourvinou-Inwood has observed, the dramatic epiphany, staged on high, had power precisely because it was rooted in the lived experiences of the theatergoers.⁴⁹ Just as worshippers became spectators in witnessing the ritual expressions of piety performed in sanctuaries, so too did they become spectators of ritual action and mortal-divine interaction in the theater.⁵⁰ In this way, the shared visual vocabulary of elevational hierarchy in the sanctuary and the theater aided in the suspension of belief necessary for viewing the plays and accepting divine portrayals. Viewing an actor dressed as a god, elevated on the *skēnē* roof or with the crane, was thus akin to witnessing a divine appearance in a sanctuary. And here it is worth emphasizing that either elevated staging created this distinction and had the ability to encourage this form of witnessing; the *skēnē* roof, like the crane, came to represent the sphere of the gods. This is made clear by the fact that mortals appearing on the roof must explain why they are up there. The sanctuary functioned as a bridge between humans and the divine, and so too did the theater, with the *skēnē* roof and epiphanic appearances on high serving as the mediating elements.⁵¹

Further aiding in this negotiation and transformation were the

⁴⁹ Sourvinou-Inwood, *Tragedy and Athenian Religion*, 492–9.

⁵⁰ The etymological links between seeing and understanding have been noted by many; see, recently, Baltussen, “Early theories of sense perception,” 37. For the multiplicity of spectator understandings of witnessing the appearance of gods on stage, see Easterling, “Gods on Stage in Greek Tragedy;” for the connections between seeing and knowing in New Comedy, see Wikkiser, “A Monologue of New Comedy on the Athenian Stage.” This type of embodied borrowing is highlighted by Weiss, with special attention to the visual experience of the theater and how the similarities between painting and drama generated comparable forms of visibility (*Seeing Theater*, esp. 6–9, 29–32). Chaniotis remarks that, “an ancient theater as public space is the locus of rituals” (“Theatre Rituals,” 51); see also defenses of the ritual nature of tragic performance in Sourvinou-Inwood, *Tragedy and Athenian Religion*. Cf. Moretti (among others), who sees the theater and sanctuary as distinct entities (“The Theater of the Sanctuary of Dionysus Eleuthérios in Late Fifth-Century Athens,” 378–80).

⁵¹ For the sanctuary as bridge, see Marconi, *Temple Decoration and Cultural Identity*, 28.

sightlines and viewing axes within the theater and sanctuary of Dionysos. Prior to the construction of a permanent *skēnē* in the 4th-c., spectators in the *theatron* would have seen parts of the Temple of Dionysos, particularly its entablature and roof, rising behind the temporary *skēnē* (see Fig. 1).⁵² During the early days of the Great Dionysia festival, the smoke of sacrificial meat burning on the altar would have also been noticeable rising in the background.⁵³ Should they glance back, they would have noted that they were sitting on the foothills of the Akropolis with the sacred heart of the polis rising directly behind them. The theater was thus deeply embedded—spatially, physically, sensorially—in the sacred landscape of the city. This spatial blurring of the boundaries of ritual space complemented the ontological blurring present in the theater, where the practice of witnessing, learned and borrowed from rituals in sanctuaries, became inscribed in the theatrical experience and made manifest in the spatial distinction between mortal and immortal.⁵⁴ That the gods were fundamentally inaccessible and mysterious, that they were not of the mortal world, was reified in the staging of divine actors. It was further accentuated by the clear explanations given whenever non-deities appeared on high: to be on the roof, in the realm of the gods, when mortal required clearly articulated justification.

This analysis demonstrates how approaching theatrical staging from a conservative point of view, rather than limiting interpretative possibility, opens new avenues for thinking about how these divine transformations were created. By grounding tragic performance in the realities of the physical theater and its mechanisms, a richer and more nuanced understanding of dramatic transformation becomes possible. Ultimately, this approach underscores the

⁵² That the Late Archaic Temple of Dionysos featured sculpture is clear (Despinis, “Σημειώσεις για τα εναέτια,” “Il tempio arcaico di Dioniso Eleuterio;” Stewart, “The Persian and Carthaginian Invasions of 480 B.C.E.,” 581–2; Santaniello, “Il santuario di Dioniso *Eleuthereus*,” Paga, *Building Democracy in Late Archaic Athens*, 147–8).

⁵³ Wiles highlights the axis between the center of the *theatron* and the altar beyond (*Tragedy in Athens*, 57–8), although the *skēnē* would have blocked this direct view for some portions of the audience.

⁵⁴ On sacred “blurring,” see Ghey, “Beyond the temple.”

benefits of holistic inquiry: the physical and mechanical features emerge not as secondary or mute elements, but as integral components in robust textual interpretation, performance reconstruction, and ontological transformation.

Acknowledgements

My thanks to the anonymous reviewers and editorial team at *GRBS* for their excellent feedback and suggestions. I also thank Mitch Brown, Michael R. Halleran, Rebecca Levitan, John Lombardini, Jocelyn Moore, and Maya Parfitt. This article owes much to the Swem Faculty Writing Retreat at William & Mary for providing a dedicated space and time for research and writing.

William & Mary
jpaga@wm.edu

ORCID: 0000-0002-7530-1807

Appendix: Plays with *Definite*, *Likely*, and *Possible* Elevated Stagings

Aeschylus, *Agamemnon*

Definite staging on *skēnē* roof for watchman (1–39) due to στεγαις (3), which provides a clear explanation for mortal being on roof.

Aeschylus, *Eumenides*

The entire play could be staged without using the *skēnē* roof or crane, but the roof was *likely* used for Apollo's appearances (64–93, 179–234) because he speaks to Orestes seemingly without being seen and because the *skēnē* (in the first part) represents his temple at Delphi (in the actual pediment of which was a sculptural representation of the god, adding further nuance to his epiphanic appearance on the roof). It is *possible* that the ghost of Klytemnestra appeared on the roof (94–139), but only if Apollo did not, otherwise the two supernatural beings would overlap in their rooftop appearances. It would be unusual for Klytemnestra's ghost to appear on the *skēnē* roof and Apollo at the orchestra level, given his divine status, so my preference is for Apollo to appear on the roof and Klytemnestra's ghost to appear at the level of the orchestra.⁵⁵ It is also *possible* that Athena appeared on the *skēnē* roof when the setting transforms to Athens (397–489, 566–conclusion of play).

⁵⁵ Here I disagree with Mastronarde, who posits the ghost of Klytemnestra on the *skēnē* roof and Apollo at the orchestra level ("Actors on High," 284–5). See also Sommerstein, *Aeschylus: Eumenides*, 94, who suggests that Apollo appeared on an *ekkyklema* (see also 100–1 for the complexities of staging Klytemnestra's ghost, although many of the possibilities listed are not archaeologically feasible). To spatially elevate the (female) ghost of a murderer above a (male) god seems unlikely, although such a scenario could have been employed specifically to highlight Klytemnestra's flouting of ritual norms even in death.

Aeschylus, *Persians*⁵⁶

Possible use of *skēnē* roof for ghost of Darius (supernatural being), but only if the *skēnē* represents his tomb.⁵⁷

Aeschylus (?), *Prometheus Bound*⁵⁸

There are multiple complications with staging but it is possible that both the *skēnē* roof and the crane were used: it is a straightforward way to deal with the chorus and Oceanos, all of whom are referred to with language indicating elevated stagings. The chorus

⁵⁶ If this *possible* assignation is correct, this would be the earliest extant play for which a *skēnē* must be necessary (see also Pöhlmann, “New Arguments for a Skene Building in Early Greek Tragedy: Second Thoughts,” 139–42), although I doubt it was the first play to ever use a *skēnē*. For the possible use of the so-called “Charonian steps” for the appearance of Darius’ ghost, predicated on the argument that the play was first staged in Syracuse, see Bosher, “Hieron’s Aeschylus,” 104–5. Yet the archaeological evidence at Syracuse only supports the existence of such an underground level in the 3rd-c.; it is unwise to retroject it 150 years and I find it unlikely that such features existed in any 5th-c. theaters, which are largely characterized by simplicity and ephemerality in their built components (there is no archaeological evidence for such an underground passage in any known theaters of the 5th-c.).

⁵⁷ The issue of the *skēnē* in the *Persians* is complex. Wilamowitz first argued that the *skēnē* was not in regular usage until the time of Aeschylus’ *Oresteia* (“Die Bühne des Aischylos”), an argument accepted and relitigated by Taplin (*The Stagecraft of Aeschylus*, 452–59, with discussion of earlier bibliography both in agreement and disagreement with Wilamowitz); several scholars generally follow this line of thought with some minor disagreements, including Garvie, *Aeschylus: Persae*, xlii–xlix, with earlier bibliography both pro and against; Sommerstein, *Aeschylean Tragedy*, 17–18; Liapis, “Σκηνικός και Δραματικός Χωρος στους ΕΙΤΑ ΕΙΙΙ ΘΗΒΑΣ,” 93–6 (concerned with the *Seven Against Thebes*, but with similar argumentation regarding the presence of a *skēnē* pre-*Oresteia*). For a strong argument in favor of an early date for the *skēnē*, see Librán Moreno, “La ΣΚΗΝΗ en los Fragmentos Trágicos Anteriores a la *Orestía*,” with early bibliography; and Pöhlmann, “New Arguments for a Skene Building in Earlier Greek Tragedy: Second Thoughts.”

⁵⁸ There are numerous problems with the *Prometheus Bound*, including its authorship and date (for relevant discussion, see Griffith, *Aeschylus: Prometheus Bound*, 31–5; Davidson, “Theatrical Production,” 209–10; Sommerstein, *Aeschylus: Persians, Seven against Thebes, Suppliants, Prometheus Bound*, 432–4, 438–9; “Aeschylus;” Gianvittorio-Ungar, *Narratives at Play in Aeschylus*, 23–5). Further discussion of the use of the crane in Aeschylus in Di Benedetto and Medda, *La tragedia sulla scena*, 19–22.

is compared to birds (125), are said to be winged (126, 129), possess a winged car (135), and they move from an elevated plane to the earth below (272)—all of this creates a scenario with a *definite* staging on high and certainly on the *skēnē* roof (a group this large cannot be lifted with the crane, nor is it likely that individual cranes were erected for each chorus member).⁵⁹ Oceanos must also appear on high: he says that he comes on a swift-winged bird (286), and he then departs in a pathway of air on a four-legged bird with wings (394–95). Given his relatively brief appearance (112 lines) and clear references to flying, we can envision the actor lifted with the crane and suspended to deliver his lines.⁶⁰

Euripides, *Alcestis*

It is *possible* that Apollo appeared on the *skēnē* roof during the prologue (1–71), in contradistinction to Thanatos, who surely appears at the orchestra level: such a staging would highlight the respective spheres of influence of the two immortal beings, as well as empha-

⁵⁹ This proposed staging is contra, for instance, the stage directions offered on the Internet Classics Archive, which has the entire chorus suspended for a minimum of 158 lines; such a scenario is also implied in stage directions in Sommerstein's Loeb edition (*Aeschylus: Persians, Seven against Thebes, Suppliants, Prometheus Bound*); further presented as "fact" in Chondros, "Deus-Ex-Machina Reconstruction and Dynamics;" Chondros et al., "'Deus-Ex-Machina' Reconstruction in the Athens Theater of Dionysus." Instead, we should envision the chorus appearing on the *skēnē* roof (perhaps reinforced to accommodate their combined weight) and then descending a ladder (or ladders) to the level of the orchestra. It remains possible that their costumes could include elements indicating their movement (feathers or fins, for instance) and they might only appear at the orchestra level, but then how and from/to where do they "descend to the ground" (πέδοι δὲ βαῖσαι, 272) such that Oceanos does not notice their presence?

⁶⁰ Less likely is a staging wherein Oceanos appears on the *skēnē* roof simultaneously with the chorus. Although certainly possible, such a staging would create logistical and dramaturgical problems because his appearance would overlap with the chorus' similarly elevated position (they descend as he arrives). Given that Oceanos never acknowledges the chorus, who are his daughters, nor they he, it might be the case that the chorus descends the *skēnē* roof via a rear ladder and stays off-stage for all (or most) of Oceanos' interaction with Prometheus (as postulated by Griffith, *Aeschylus: Prometheus Bound*, 109, 138, 140). The arrival of Oceanos on the crane would also serve to draw attention away from the chorus' departure from the roof.

size Apollo's status as a divinity rather than the servant of Admetus he used to be.

Euripides, *Andromache*

Thetis has a *definite* appearance on high (1226–1272 or until end of play), either on the *skēnē* roof or via the crane, due to the chorus heralding her approach as involving movement in the air (λευκὴν αἰθήρα / πορθμευόμενος, 1228–1229) and the epiphanic nature of her appearance.

Euripides, *Bacchae*

When Dionysos reveals himself in his godhood at the conclusion of the play (by 1330), he *likely* appears on the *skēnē* roof or via the crane, in order to physically reify his divinity in contrast to his earlier persona, in disguise as a mortal at the level of the orchestra. It remains *possible* that he appears on the *skēnē* roof during the prologue (1–63), again to draw a contrast between his actual divine status and the mortal he will pretend to be.

Euripides, *Elektra*

Kastor and Polydeukes *definitely* appear on high, either via the crane or on the *skēnē* roof (clear reference to being “above the housetops” at 1233: δόμων ὑπὲρ ἀκροτάτων). If both appear, as is implied by the plural (234: φαίνουσι τίνες - δαίμονες ἢ θεῶν), then a roof appearance is to be preferred, due to the difficulty and potential problems of lifting two actors (or one speaking actor and one dummy) with the crane.

Euripides, *Hekuba*

The ghost of Polydorus *likely* appears on the *skēnē* roof during the prologue because he is a supernatural being and there are references to him flitting about Hekuba's head and floating in the air (30–33: νῦν δ' ὑπὲρ μητρὸς φίλης / Ἐκάβης αἴσσω, σῶμ' ἐρημώσας ἐμόν, / τριταῖον ἤδη φέγγος αἰωρούμενος).⁶¹

Euripides, *Helen*

Kastor and Polydeukes *likely* appear on high, either via the crane or

⁶¹ Also suggesting a staging of Polydorus' ghost on the *skēnē* roof is Battezzato, *Euripides: Hecuba*, 5, 71–2.

on the *skēnē* roof, because they are demigods and appear suddenly.⁶²

Euripides, *Herakles*

Iris and Lyssa both appear “above the house” (817: ὑπὲρ δόμων), but while Iris seems to depart via the air, Lyssa descends to the house (872–873: στεῖχ’ ἐς Οὐλύμπον πεδαίρουσ’, Ἴρι, γενναῖον πόδα: / ἐς δόμους δ’ ἡμεῖς ἄφαντοι δυσόμεσθ’ Ἡρακλέους), which would suggest a staging with Iris suspended via the crane and Lyssa standing on the *skēnē* roof, to then descend via a ladder in the back or through a trapdoor directly into the *skēnē*.

Euripides, *Hippolytos*

There are two *likely* appearances on high: Aphrodite during the prologue and Artemis at the conclusion. Both are *likely* due to the divine nature of their beings, and because Artemis is heard but not seen by Hippolytos (1391–1393).

Euripides, *Ion*

Athena’s appearance at the end of the play is a *definite* example, achieved either via the crane or on the *skēnē* roof, heralded by Ion’s exclamation to Kreousa that a divinity is appearing above them (1549–1550: τίς οἴκων θυοδόκων ὑπερτελῆς / ἀντήλιον πρόσωπον ἐκφαίνει θεῶν;).

Euripides, *Iphigenia among the Taurians*

It is *possible* that Athena appears on high at the conclusion of the play, fitting with the general dramatic convention of a god appearing epiphanically at the conclusion, particularly in Euripides, despite a lack of specific language implying an elevated position.⁶³

⁶² As with *Elektra* and *Herakles*, I believe a staging on the roof is more likely than the crane, given the weight and balance issues of two actors, but it cannot be excluded (cf. Allan, who prefers a staging with the crane (*Euripides: Helen*, 40), and Mastronarde, who believes the crane was likely used (“Actors on High,” 284)).

⁶³ For these scenes in Euripides’ *oeuvre*, see Wildberg, “Piety as Service, Epiphany as Reciprocity;” Budelmann, “Belief, Make-Believe, and the Religious Imagination.” Kearns admits the possibility of Athena appearing on the *skēnē* roof but strongly prefers a staging via the *mēchanē* (*Euripides: Iphigenia in Tauris*, 23–4, 289).

Euripides, *Medea*

At the close of the play, there are no clear references to the roof of the house or to Medea being “above,” although she says that Jason cannot touch her (1320), leaving open the possibility that the entire play could be staged at the orchestra level, thus the classification of this play in the *likely* category. Despite Aristotle’s use of *Medea* as a negative example of the use of the crane (*Poetics* 1454a–b), I find it more likely that—at least during its initial staging—the *skēnē* roof was used, and this was likely preferable in subsequent restagings, particularly in smaller theaters where a crane may not have been available.⁶⁴ The logistical problems of managing an actor, possibly two child-size dummies, and a chariot with steeds⁶⁵ with the crane would have presented numerous difficulties but would have been particularly spectacular if achieved (extra kudos to the *chorēgos* and crane operators). For a roof staging, we might suppose a painted wooden chariot box laid flat on the roof, which the actor playing Medea could then prop upright and stand behind, carrying the prop bodies of her children. It is important that we do not presume the Lucanian red-figure calyx krater of ca. 400 BCE, and other painted examples of the climactic scene of the *Medea*, represent accurately the initial staging of the play some thirty years prior in Athens.⁶⁶

⁶⁴ Also suggesting a roof staging is Arnott, “Euripides and the Unexpected,” 59.

⁶⁵ For the nature of the steeds pulling the chariot, see Mastronarde, *Euripides: Medea*, 377–8; note that he prefers a staging of this scene with the crane (“Actors on High,” 281; *Euripides: Medea*, 9, 377). Taplin intriguingly suggests that the dragon/snake steeds often depicted on painted pottery with scenes of Medea may have been the result of a later restaging, since the Euripidean text does not specify their nature (“How Was Athenian Tragedy Played in the Greek West?,” 243–4).

⁶⁶ Red-figure calyx-krater, near the Policoro Painter, Lucanian, ca. 400 (Cleveland Museum of Art 1991.1). While I agree with Taplin that such scenes on pottery reflect the influence of Euripides’ play (“The pictorial record,” 78–80), it does not necessitate that the South Italian vase painters of ca. 400 were attempting to render an exact likeness of the dramatic performance as it occurred in Athens in 431, and we should therefore exercise caution when extrapolating (chronologically and geographically) from pot to play.

Euripides, *Orestes*

The *Orestes* has two *definite* and concurrent stagings on high and is the only play for which both the *skēnē* roof and the crane would have been necessary (unless the above suggestions about the *Prometheus Bound* are correct). Orestes, Pylades, Hermione, and perhaps Elektra (there are no references to her presence, but she is often assumed) are certainly on the *skēnē* roof, given clear references to the *geison* and Menelaos' description of the figures being on top of his house (1569–1570: ἡ τῷδε θριγκῷ κράτα συνθραύσω σέθεν, / ῥήξας παλαιὰ γεῖσα, τεκτόνων πόνον; 1574: δόμων δ' ἐπ' ἄκρων τούσδε πυργηρουμένους; further references at 1593, 1620). While this scene is unfolding, Apollo appears (perhaps with a mute actor playing Helen or a dummy⁶⁷) and seems to be heard but not seen; he cannot appear on the *skēnē* roof, since it is already occupied by mortals, so he must have been held aloft by the crane, to emphasize his distinct ontological status.

Euripides, *Phoenician Women*

The opening of this play has a *definite skēnē* roof appearance by Antigone and her maid, clearly signaled with language about climbing a ladder to the top of the house to look at the assembled warriors and unfolding battle (88–106).

Euripides, *Rhesus*⁶⁸

Muse appears in a *definite* example of a staging on high, accompanied by language describing her as being “overhead” (886: τίς ὑπὲρ κεφαλῆς θεός). It is possible she appears via the crane, although if she also carries the body of Rhesus, a roof staging is preferred (the presence of an actor with a second actor or dummy, in general,

⁶⁷ Lines 1631–1632, which point to the existence of Helen with Apollo, are considered spurious by some commentators (bracketed by Kovacs, *Euripides: Helen, Phoenician Women, Orestes*). If Helen is with Apollo, a dummy prop is to be preferred over a mute actor for issues of crane stability and safety.

⁶⁸ The authorship of the *Rhesus* is debated, with most scholars postulating a later 4th-c. author (Kovacs, *Euripides: Bacchae, Iphigenia at Aulis, Rhesus*, 352–3; Laipis, *A Commentary on the Rhesus Attributed to Euripides*, lxvii–lxxv; Fries, *Pseudo-Euripides, Rhesus*, 22–47; Fantuzzi, *The Rhesus Attributed to Euripides*, 16–24; Torrance “Euripides”); it is included here, like the *Prometheus Bound*, because the later authorship cannot be confirmed.

is more suggestive of a roof staging).⁶⁹ It is also *likely* that Athena earlier appears on high because she is a god and because she is seemingly heard but not seen (595–610).

Euripides, *Suppliant Women*

Evadne has a *definite* appearance on the *skēnē* roof to jump to her death, with numerous references to her being high up; she even compares herself to a bird (1045–1047: ...ἢδ' ἐγὼ πέτρας ἔπι / ὄρνις τις ὥσεί Καπανέως ὑπὲρ πυρᾶς / δύστηνον αἰώρημα κουφίζω, πάτερ). It is also *possible* that Athena appears on high at the conclusion of the play, in keeping with Euripidean stage conventions for epiphanic appearances of divinities at the close of action and because it is unclear if Theseus can see her in addition to hear her.⁷⁰

Euripides, *Trojan Women*

It is *possible* that Athena and/or Poseidon appeared on high during the prologue. If both are elevated, then they certainly stood on the *skēnē* roof and were not individually suspended with two separate cranes, nor is it likely that one would be lifted via the crane and the other on the roof: such a staging implicitly communicates a power dynamic.⁷¹

Sophokles, *Ajax*

It is *likely* that Athena begins the play on the *skēnē* roof, given that she is heard but not seen⁷² by Odysseus and Ajax (14–17); there is

⁶⁹ The crane is preferred by Liapis, who suggests that Muse was lifted via the crane and then set down at the level of the orchestra (*A Commentary on the Rhesus Attributed to Euripides*, 303–4), a scenario that was almost certainly a mechanical impossibility (also assuming an appearance via the crane is Fries, *Pseudo-Euripides, Rhesus*, 440). Fantuzzi's interpretation is typical: "The Muse enters on the mechane, as is made certain by 886 ὑπὲρ κεφαλῆς, and her divinity is thus immediately recognised" (*The Rhesus Attributed to Euripides*, 586). But there is nothing about the phrase ὑπὲρ κεφαλῆς that necessitates the crane: a staging on the roof would still preserve the sense of Muse being "overhead" and would still physically and visually connote her divine status.

⁷⁰ Mastronarde notes that Athena's appearance here is possibly with the crane ("Actors on High," 283), but I prefer a staging on the *skēnē* roof.

⁷¹ Contra Mastronarde, who locates Poseidon on the roof and Athena on the crane ("Actors on High," 277–8, 283).

⁷² On Athena's invisibility, see Pucci, "Gods' Intervention and Epiphany in Sophocles," 17–22, although he is not convinced of an elevated staging

no reason for her to appear via the crane and be held aloft for 133 lines.⁷³

Sophokles, *Philoktetes*

At the conclusion of the play, it is *likely* that Herakles appears on high, either on the *skēnē* roof, which represents Philoktetes' cave, or via the *mēchanē*.⁷⁴ His godhood is recognized and sets him apart from the mortal characters of the play, thus implying a spatial separation.

(22–3).

⁷³ Although he adduces an anachronistic *theologeion*, Calder also argues for a position of Athena in an elevated position, rather than on the orchestra level (“The Entrance of Athena in Ajax”).

⁷⁴ Mastronarde prefers a crane staging (“Actors on High,” 283), although I believe either could be used; Pucci suggests an appearance “on the *theologeion* or on another *mechane*” (“Gods’ Intervention and Epiphany in Sophocles,” 34).

Works Cited

- Adam, J.-P. *La construction romaine: matériaux et techniques*. Picard, 1984.
- Allan, W. *Euripides: Helen*. Cambridge University Press, 2008.
- Arnott, G. "Euripides and the Unexpected." *Greece & Rome* 20 (1973): 49–64.
- Ashby, C. *Classical Greek Theatre: New Views on an Old Subject*. University of Iowa Press, 1999.
- Baltussen, H. "Early Theories of Sense Perception: Greek Origins." In *The Routledge Handbook of Sensory Archaeology*, edited by R. Skeates and J. Day, pp. 35–47. Routledge, 2020.
- Battezzato, L. *Euripides: Hecuba*. Cambridge University Press, 2018.
- Bethe, E. *Prolegomena zur Geschichte des Theaters: Untersuchungen über die Entwicklung des Dramas, der Bühne, des Theaters*. S. Hirzel, 1896.
- Bieber, M. *History of the Greek and Roman Theater*. 2nd ed. Princeton University Press, 1961.
- Biers, W. R. "The Theater at Phlius: Excavations 1973." *Hesperia* 44 (1975): 51–68.
- Bosher, K. "Hieron's Aeschylus." In *Theater Outside Athens*, edited by K. Bosher, pp. 97–111. Cambridge University Press, 2012.
- Brulé, P. "Voir et entendre le dieu 'Apo Mechaines' d'Euripides." In *Fabriquer du divin: Constructions et ajustements de la représentation des dieux dans l'Antiquité*, edited by N. Belayche and V. Pirenne-Delforge, pp. 143–66. Liège, 2015.
- Budelmann, F. "Belief, Make-Believe, and the Religious Imagination: The Case of the Deus Ex Machina in Greek Tragedy." In *Cognitive Approaches to Ancient Religious Experience*, edited by E. Eidinow, A. Klostergaard Petersen, and J. North, pp. 96–117. Cambridge University Press, 2022.
- Bur, T. *Technologies of the Marvellous in Ancient Greek Religion*. Cambridge University Press, 2025.
- Calder III, W. M. "The Entrance of Athena in Ajax." *Classical Philology* 60, no. 2 (1965): 114–16.
- Chanotis, A. "Theatre Rituals." In *The Greek Theatre and Festivals: Documentary Studies*, edited by P. Wilson, pp. 48–66. Oxford University Press, 2007.
- Chondros, T. "Deus Ex Machina Reconstruction and Dynamics." In *International Symposium on History of Machines and Mechanisms*, ed-

- ited by M. Ceccarelli, pp. 87–104. Dordrecht, 2004.
- Chondros, T., K. Milidonis, G. Vitzilaios, and J. Vaitsis. “‘Deus Ex Machina’ Reconstruction in the Athens Theater of Dionysus.” *Mechanism and Machine Theory* 67 (2013): 172–91.
- Collard, C. *Aeschylus: Persians and Other Plays*. Oxford University Press, 2008.
- Connor, W. R. “City Dionysia and Athenian Democracy.” In *Aspects of Athenian Democracy*, edited by W. R. Connor, M. Herman Hansen, K. A. Raafaub, and B. S. Strauss, pp. 7–32. Copenhagen, 1990.
- Coulton, J. J. *Ancient Greek Architects at Work*. Ithaca: Cornell University Press, 1977.
- Csapo, E. “The Men Who Built the Theatres: Theatropolai, Theatronai, and Arkhitektones.” In *The Greek Theatre and Festivals*, edited by P. Wilson, pp. 87–121. Oxford University Press, 2007.
- Csapo, E., and P. Wilson. “The Finance and Organization of the Athenian Theatre in the Time of Eubulus and Lycurgus.” In *Greek Theatre in the Fourth Century B.C.*, edited by E. Csapo et al., pp. 393–424. De Gruyter, 2014.
- Dale, A. M. “Seen and Unseen on the Greek Stage: A Study in Scenic Conventions.” In *Collected Papers*, edited by T. B. L. Webster and E. G. Turner, pp. 103–18. Cambridge University Press, 1969.
- Davidson, J. “Theatrical Production.” In *A Companion to Greek Tragedy*, edited by J. Gregory, 194–211. Wiley-Blackwell, 2005.
- Despinis, G. “Σημειώσεις για τα εναέτια...” In *Delphes: Cent ans après la Grande Fouille*, BCH Suppl. 36, 355–75. 2000.
- . “Il tempio arcaico di Dioniso Eleuterio.” *ASAtene* 74–75 (2000): 193–214.
- Di Benedetto, V., and E. Medda. *La tragedia sulla scena*. Einaudi, 1997.
- Dimarogonas, A. “Mechanisms of the Ancient Greek Theater.” *ASME Design Conference* 46 (1992): 229–34.
- Dörpfeld, W., and E. Reisch. *Das griechische Theater*. Barth & Von Hirst, 1896.
- Dunn, F. *Tragedy’s End: Closure and Innovation in Euripidean Drama*. Oxford University Press, 1996.
- Easterling, P. E. “Gods on Stage in Greek Tragedy.” In *Religio Grae-*

- co-Romana*, edited by J. Dalfen et al., pp. 77–86. Ferdinand Berger, 1993.
- Fantuzzi, M. *The Rhesus Attributed to Euripides*. Cambridge University Press, 2020.
- Frederiksen, R., E. R. Gebhard, and A. Sokolicek, eds. *The Architecture of the Ancient Greek Theatre*. Aarhus University Press, 2015.
- Fries, A. *Pseudo-Euripides, Rhesus*. De Gruyter, 2014.
- Garvie, A. F. *Aeschylus: Persae*. Oxford University Press, 2009.
- Ghey, E. “Beyond the Temple: Blurring the Boundaries of ‘Sacred Space.’” In *TRAC 2004*, edited by J. Bruhn, B. Croxford, and D. Grigoropoulos, pp. 109–18. Oxford: Oxbow, 2005.
- Gianvittorio-Ungar, L. *Narratives at Play in Aeschylus*. Brill, 2025.
- Griffith, M. *Aeschylus: Prometheus Bound*. Cambridge University Press, 1983.
- Hall, E. *The Theatrical Cast of Athens*. Oxford University Press, 2006.
- Halleran, M. *Stagecraft in Euripides*. Barnes & Noble, 1985.
- Hourmouziades, N. *Production and Imagination in Euripides*. Greek Society for Humanistic Studies, 1965.
- Jebb, R. *Sophocles: Plays and Fragments*. Cambridge University Press, 1932.
- Kassel, R., and C. Austin. *Poetae Comici Graeci*. Vol. 2. De Gruyter, 1991.
- Kearns, E. *Euripides: Iphigenia in Tauris*. Cambridge University Press, 2023.
- Kovacs, D. *Euripides: Suppliant Women, Electra, Heracles*. Harvard University Press, 1998.
- . *Euripides: Helen, Phoenician Women, Orestes*. Harvard University Press, 2002.
- . *Euripides: Bacchae, Iphigenia at Aulis, Rhesus*. Harvard University Press, 2003.
- Lendle, O. “Überlegungen zum Bühnenkran.” In *Studien zur Bühnendichtung und zum Theaterbau der Antike*, edited by E. Pöhlmann, pp. 165–72. Frankfurt, 1995.
- Ley, G. *The Theatricality of Greek Tragedy: Playing Space and Chorus*. University of Chicago Press, 2007.
- Liapis, V. *A Commentary on the Rhesus Attributed to Euripides*. Oxford University Press, 2012.
- . “Σκηνικός και Δραματικός Χώρος στους ΕΠΤΑ ΕΠΙ ΘΗΒΑΣ.”

- Logeion* 9 (2019): 80–102.
- Librán Moreno, M. “La ΣΚΗΝΗ en los Fragmentos Trágicos Anteriores a la Orestía.” *Myrtia* 17 (2002): 57–85.
- Lowe, N. “Aristophanic Spacecraft.” In *Playing around Aristophanes*, edited by L. Kozak and J. Rich, pp. 48–64. Aris & Phillips, 2006.
- Marconi, C. *Temple Decoration and Cultural Identity in the Archaic Greek World*. Cambridge University Press, 2007.
- Mastronarde, D. J. “Actors on High: The Skene Roof, the Crane, and the Gods in Attic Drama.” *Classical Antiquity* 9 (1990): 247–94.
- . *Euripides: Phoenissae*. Cambridge University Press, 1994.
- . *Euripides: Medea*. Cambridge University Press, 2002.
- Meineck, P. “The Embodied Space: Performance and Visual Cognition at the Fifth-Century Athenian Theatre.” *New England Classical Journal* 39 (2012): 3–46.
- Mikalson, J. D. *Honor Thy Gods: Popular Religion in Greek Tragedy*. University of North Carolina Press, 1991.
- Möllendorff, P. von. “Technologies of Performance: Machines, Props, Dramaturgy.” In *A Cultural History of Theatre in Antiquity*, edited by M. Revermann, pp. 163–223. Bloomsbury, 2017.
- Moretti, J.-C. “The Theater of the Sanctuary of Dionysus Eleuthérios in Late Fifth-Century Athens.” *Illinois Classical Studies* 24–25 (1999–2000): 377–98.
- Newiger, H.-J. “Ekkyklema und Mechané in der Inszenierung des griechischen Dramas.” *Würzburger Jahrbücher für die Altertumswissenschaft* 16 (1990): 33–42.
- Olson, S. D., ed. *Aristophanes: Peace*. Oxford University Press, 1998.
- Paga, J. “The Greek Theater.” In *A Companion to Greek Architecture*, edited by M. M. Miles, pp. 360–73. Blackwell, 2016.
- . *Building Democracy in Late Archaic Athens*. Oxford University Press, 2021.
- . “Epiphany on the Skene Roof.” In *Reimagining Greco-Roman Drama*, edited by J. Paga, M. Brown, and M. R. Halleran. Routledge, forthcoming.
- Papastamati-von Moock, C. “The Theatre of Dionysus Eleuthereus in Athens: New Data and Observations on Its ‘Lycurgan’ Phase.” In *Greek Theatre in the Fourth Century B.C.*, edited by E. Csapo et al., pp. 15–76. De Gruyter, 2014.
- . “The Wooden Theatre of Dionysos Eleuthereus in Ath-

- ens: Old Issues, New Research.” In *The Architecture of the Ancient Greek Theatre*, edited by R. Frederiksen, E. R. Gebhard, and A. Sokolicek, pp. 39–79. Aarhus University Press, 2015.
- . “To ‘θέατρο των μεγάλων τραγικών.’” *Logeion* 10 (2020): 1–124.
- . “Auf der Suche nach dem ‘Theater der Tragiker.’” In *Identität in Stein*, edited by U. Gotter and E. P. Sioumpara, pp. 171–201. Tübingen, 2022.
- Perrone, S. “Effetti comici a bordo di un ramo di fico.” *Paideia* 63 (2008): 209–25.
- Petridou, G. *Divine Epiphany in Greek Literature and Culture*. Oxford University Press, 2016.
- Pickard-Cambridge, A. W. *The Theatre of Dionysos in Athens*. 2nd ed. Clarendon Press, 1956.
- Pierattini, A. “Early Greek Stone Construction and the Invention of the Crane.” In *Building Knowledge, Constructing Histories*, edited by I. Wouters and A. van de Voorde, pp. 1053–59. Leiden, 2018.
- Platt, V. J. *Facing the Gods*. Cambridge University Press, 2011.
- . “Epiphany.” In *The Oxford Handbook of Ancient Greek Religion*, edited by E. Eidinow and J. Kindt, pp. 491–504. Oxford University Press, 2015.
- Poe, J. P. “The Altar in the Fifth-Century Theater.” *Classical Antiquity* 8, no. 1 (1989): 116–39.
- Pöhlmann, E. “New Arguments for a Skene Building in Early Greek Tragedy.” *Logeion* 10 (2020): 125–59.
- Polacco, L. *Il teatro di Dioniso Eleutereo ad Atene*. Rome: L’Erma di Bretschneider, 1990.
- Pucci, P. “Gods’ Intervention and Epiphany in Sophocles.” *American Journal of Philology* 115, no. 1 (1994): 15–46.
- Raeburn, D., and O. Thomas. *The Agamemnon of Aeschylus*. Oxford University Press, 2011.
- Rehm, R. *The Play of Space*. Princeton University Press, 2002.
- Revermann, M. *Comic Business*. Oxford University Press, 2006.
- Santaniello, E. “Il santuario di Dioniso Eleuthereus.” In *Topografia di Atene*, edited by E. Greco, pp. 166–69. Pandemos, 2010.
- Schein, S. L. *Sophocles: Philoctetes*. Cambridge University Press, 2013.
- Scott, N. “Flying Too Close to the Sun.” *Phoenix* 73 (2019): 1–14.
- Seale, D. *Vision and Stagecraft in Sophocles*. University of Chicago

- Press, 1982.
- Senseney, J. *The Art of Building in the Classical World*. Cambridge University Press, 2011.
- Shapiro, H. A. *Art and Cult under the Tyrants in Athens*. Philipp von Zabern, 1989.
- Slater, N. *Spectator Politics*. University of Pennsylvania Press, 2002.
- Small, J. P. "Skenographia in Brief." In *Performance in Greek and Roman Theatre*, edited by G. W. Harrison and V. Liapis, pp. 111–28. Leiden, 2013.
- Sommerstein, A. H. *Aeschylus: Eumenides*. Cambridge University Press, 1989.
- . *Aeschylus: Persians, Seven against Thebes, Suppliants, Prometheus Bound*. Harvard University Press, 2009.
- . *Aeschylean Tragedy*. Duckworth, 2010.
- . "No, They Didn't Write Stage Instructions, but..." In *Page and Stage*, edited by S. D. Olsen, O. Taplin, and P. Totaro, pp. 167–71. De Gruyter, 2023.
- Sourvinou-Inwood, C. *Tragedy and Athenian Religion*. Lexington Books, 2003.
- Spira, A. *Untersuchungen zum Deus ex machina bei Sophokles und Euripides*. Verlag Michael Lassleben, 1960.
- Stewart, A. "The Persian and Carthaginian Invasions of 480 B.C.E." *American Journal of Archaeology* 112 (2008): 581–615.
- Storey, I. *Euripides: Suppliant Women*. Bloomsbury, 2008.
- Taplin, O. *The Stagecraft of Aeschylus*. Clarendon Press, 1977.
- . "The Pictorial Record." In *The Cambridge Companion to Greek Tragedy*, edited by P. E. Easterling, pp. 69–90. Cambridge University Press, 1997.
- . "How Was Athenian Tragedy Played in the Greek West?" In *Theater Outside Athens*, edited by K. Bosher, pp. 226–50. Cambridge University Press, 2012.
- Todisco, L. *Teatro e spettacolo in Magna Grecia e in Sicilia*. Milan, 2002.
- Torrance, I. "Euripides." *Oxford Classical Dictionary*. Accessed November 2, 2022. <https://doi.org/10.1093/acrefore/9780199381135.013.2565>.
- Townsend, R. "The Fourth-Century Skene of the Theater of Dionysos." *Hesperia* 55 (1986): 421–38.
- Weiss, N. *Seeing Theater*. Berkeley: University of California

- Press, 2023.
- Wikkiser, B. L. "A Monologue of New Comedy." *Greek, Roman, and Byzantine Studies* 50 (2010): 159–73.
- Wilamowitz-Moellendorff, U. von. "Die Bühne des Aischylos." *Hermes* 21 (1886): 597–622.
- . *Euripides: Ion*. Weidmann, 1926.
- Wildberg, C. "Piety as Service, Epiphany as Reciprocity." In *Euripides and Tragic Theatre*, edited by M. Cropp, K. Lee, and D. Sansone, pp. 235–56. *Illinois Classical Studies* 24 (1999–2000).
- Wiles, D. *Tragedy in Athens*. Cambridge University Press, 1997.
- Wilson, A. "Machines in Greek and Roman Technology." In *The Oxford Handbook of Engineering*, edited by J. P. Oleson, pp. 337–66. Oxford University Press, 2008.
- Wilson, P. *The Athenian Institution of the Khoregia*. Cambridge University Press, 2000.
- Wright, M. *Euripides: Orestes*. Bloomsbury, 2008.