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[247]DONALD J. MASTRONARDE

ACTORS ON HIGH: THE SKENE ROOF, THE CRANE, AND THE GODS IN ATTIC DRAMA*

Many recent studies of Greek tragedy and comedy have shown a special interest in staging, not only with a view to antiquarian accuracy, but also in order to assess the playwrights' techniques and skills in manipulating the visual elements of the performance for dramatic effect.¹ The present study addresses a particularly controversial aspect of staging, the appearance of actors "on high." It is generally agreed that the crane was available in the late fifth century, and it is also widely assumed that the wooden skene building of the late fifth and early fourth centuries had a flat roof, at least a part of which could serve as an additional acting space. There is much less agreement, however, about other questions, such as: how early in the fifth century was the crane introduced? When, even after its introduction, was it used in preference to some other manner of staging? When did gods appear on the roof instead of stage level? Were there structures above the main-story level of the stage building, and if so, what was their appearance? All these disagreements arise because of the inadequacy of our evidence, which permits at most a reconstruction of possibilities and probabilities. Yet a careful and integrated reassessment of this evidence may yield some useful tentative conclusions that differ from those reached by some recent authorities.

[248]The archaeological evidence for the Theater of Dionysus in which the plays of Aeschylus, Sophocles, Euripides, and Aristophanes were performed is notoriously frustrating.² Construction of the late fourth century and subsequent periods has obscured

*This paper is offered in friendship and respect to Tom Rosenmeyer in honor of his 70th birthday. I am very grateful to the journal's referees for criticisms that helped me clarify my arguments and presentation.

¹See, for example, O. Taplin, *The Stagecraft of Aeschylus* (Oxford, 1977) and *Greek Tragedy in Action* (London, 1978), David Seale, *Vision and Stagecraft in Sophocles* (Chicago, 1982), Michael R. Halleran, *Stagecraft in Euripides* (London, 1985).

²The bibliography is immense. The most important works are cited in the bibliography of H.-J. Newiger, "Drama und Theater," in G. A. Seeck, ed., *Das Griechische Drama* (Darmstadt, 1979) 496-503. I shall refer especially to the following (listed alphabetically by author): P. Arnott, *Greek Scenic Conventions*

or removed much, if not all, of the traces of earlier strata. Even for the oldest usefully-reconstructed stratum (with terrace-wall, breccia foundation, and post-holes), it is disputed whether what survives is applicable to the fifth-century theater: Pickard-Cambridge and Newiger, for example, believe that it is, while Travlos argues that these traces are not early enough. Our uncertainty is well illustrated by the recent advocacy of the view that we have been wrong to imagine a circular orchestra for this period.³ As for the the roof-level acting space, our conception of this will obviously be dependent upon how we recon-[249]struct the wooden skene building of the fifth century. By the very nature of the archaeological record, we cannot derive from it alone a view about what was built above the level of the first story (e.g. style and strength of roof, presence or absence of a second story). But we may compare two scrupulous reconstructions of the

in the 5th Century B.C. (Oxford, 1961); E. Bethe, *Prolegomena zur Geschichte des Theaters im Altertum* (Leipzig, 1896); M. Bieber, *History of the Greek and Roman Theater*² (Princeton, 1961); E. Bodensteiner, *Szenische Fragen über den Ort des Auftretens und Abgehens von Schauspielern und Chor im griechischen Drama* (Jahrbücher für classische Philologie, Supplement 19 (1893) 637–808); C. W. Dearden, *The Stage of Aristophanes* (London, 1976); W. B. Dinsmoor, “The Athenian Theater of the Fifth Century,” in G. E. Mylonas, ed., *Studies presented to David Moore Robinson* (St. Louis, 1951) 1.309–30; W. Dörpfeld and E. Reisch, *Das griechische Theater. Beiträge zur Geschichte des Dionysos-Theaters in Athen und anderer griechischer Theater* (Athens, 1896); K. J. Dover, “The Skene in Aristophanes,” *PCPhS* 192 (1966) 2–17; N. C. Hourmouziades, *Production and Imagination in Euripides* (Ἑλληνικὴ Ἀνθρωπιστικὴ Ἐταιρεία, Σειρά 2, 5, Athens, 1965); W. Jobst, *Die Höhle im griechischen Theater des 5. und 4. Jahrhunderts v. Chr.*, Sitzungsberichte der Österreichischen Akademie der Wissenschaften, Phil.-Hist. Klasse, 268:2 (Vienna, 1970); S. Melchinger, *Das Theater der Tragödie* (Munich, 1974); A. Müller, *Lehrbuch der griechischen Bühnenalterthümer* (Freiburg, 1886); O. Navarre, *Dionysos. Étude sur l'organisation matérielle du théâtre athénien* (Paris, 1895); A. W. Pickard-Cambridge, *The Theatre of Dionysus at Athens* (Oxford, 1946); C. Robert, “Zur Theaterfrage,” *Hermes* 32 (1897) 421–53; J. Travlos, *Pictorial Dictionary of Ancient Athens* (London, 1971) 537–52; A. D. Trendall and T. B. L. Webster, *Illustrations of Greek Drama* (London, 1971). Among the most recent contributions may be cited H. Kenner, “Zur Archäologie des Dionysos-theaters in Athen,” *JÖAI* 57 [Hauptblatt] (1986/87) 55–91; R. Townsend, “The Fourth-Century Skene of the Theater of Dionysus at Athens,” *Hesperia* 55 (1986) 421–38.

³E. Pöhlmann, “Die Prohedrie des Dionysostheaters im 5. Jahrhundert und das Bühnenspiel der Klassik,” *MusHelv* 38 (1981) 129–46: fragments of the honorary benches that adjoined the orchestra point to a rectangular edge, not a circular or polygonal one, so that the theater of Dionysus may have been no different than theaters with rectangular orchestra at Thorikos and elsewhere built in the second half of the fifth century. Cf. also E. Gebhard, “The Form of the Orchestra in the Early Greek Theater,” *Hesperia* 43 (1974) 428–40 (in favor of rectangular form); F. Kolb, *Agora und Theater. Volks- und Festversammlung*, DAI, Archäologische Forschungen 9 (Berlin, 1981) 16–17 (in favor of circular form except for certain small theaters in which constraints of expense and lay of land compelled rectangular form); C. Ashby, “The Case for the Rectangular/Trapezoidal Orchestra,” *Theatre Research International* 13 (1988) 1–20 (history of question and summary of evidence). For the question of the shape of the orchestra as for that of the existence of projecting paraskenia and others, one may wonder what was the origin of a well-attested later form that is unattested or doubtful for the earlier period. If the Theater of Dionysus had operated for generations with a rectangular orchestra, why was a circular orchestra introduced? Was the later raised stage a development of an original, much smaller difference of level between actors’ area and choral dancing space? When and why were projecting paraskenia felt to be a desirable addition? For a recent conjecture about the projecting paraskenia, see R. Townsend (*supra*, n. 2).

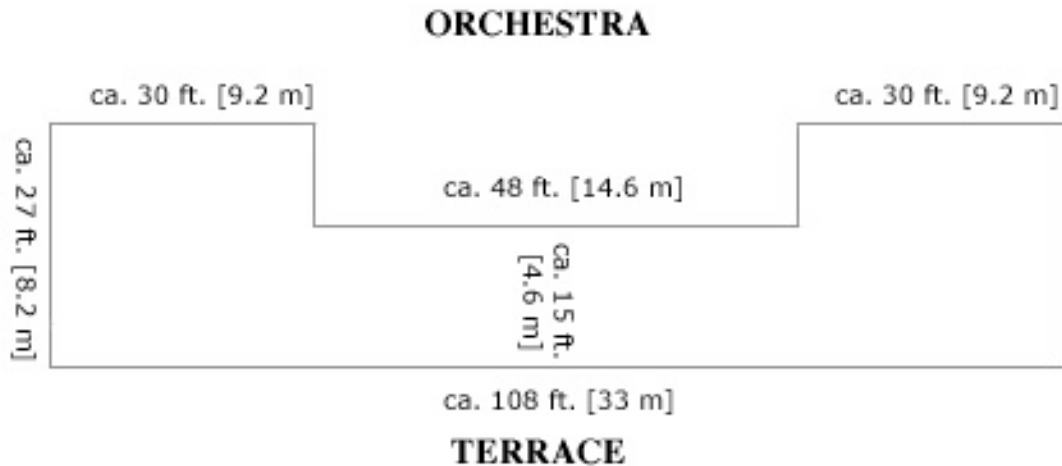


Figure 1. Conjectured skene building, top view (based on Pickard-Cambridge, fig. 7, p. 16).

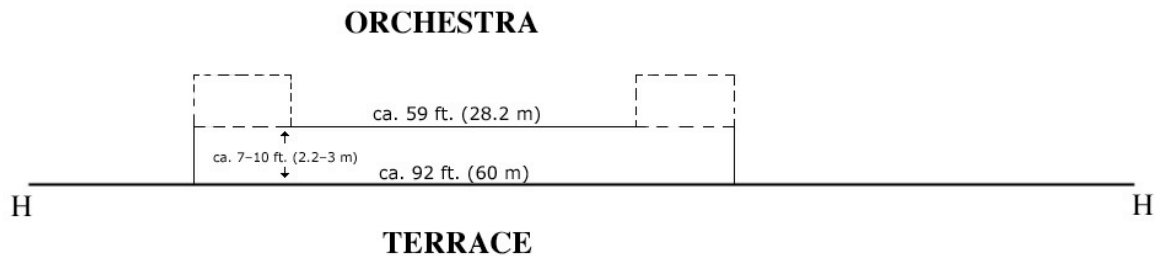


Figure 2. Conjectured skene building, top view (based on Newiger, pp. 461, 494).

skene building itself in order to arrive at a rough estimate of the area potentially available for acting on the upper level. Pickard-Cambridge (see Fig. 1) postulates a building extending the whole length of the skene background (about 108 feet [or 33 meters]), having a depth of about 15 feet [or 4.6 meters] in its central section, and featuring projecting wings (paraskenia). Newiger (see Fig. 2) posits a somewhat less extensive and shallower building (about 92 by 7–10 feet [or 60 by 2.2–3 meters]) and concedes that the existence of paraskenia cannot be proved for the fifth century.⁴ The roof need not have been built strongly enough for safe use by actors over its entire extent.⁵ Most scenes involving actors on the upper level present only one or two [250]persons, so that a

⁴Both make use of archaeological traces. It is possible that these traces have nothing to do with the fifth-century theater (as Travlos argues) and that an even smaller and simpler building is to be assumed: so Taplin, *Greek Tragedy* (*supra*, n. 1) 10–11 imagines a building about 40 feet long by 16 feet deep.

⁵This point was made long ago by Robert (*supra*, n. 2: 430), who was reacting to the massive and complex structures advocated by Bethe (*supra*, n. 2) and Dörpfeld (*supra*, n. 2).

strengthened roof platform over the central doorway as small as, say, 10 feet wide by 10 feet deep [or 3 by 3 meters] would normally have sufficed. As we shall see, however, a few plays may have involved sizeable props and a larger number of persons on high, so the practical acting area of the roof may have been as large as 15 feet deep by 40 or 50 feet wide [or 4.6 by 12.2–15.2 meters], as many authorities assume. But in reaching such a conclusion, we are already appealing to the texts and not relying on what archaeology can tell us.

Vase-paintings that possibly depict scenes from Greek drama provide a second type of evidence external to the Greek texts themselves. Even in cases where it can be established with at least some small probability that a painting makes some allusion to a particular play known to the artist and some of his audience, this evidence is of limited value. Most “illustrations” were produced at least a generation after the deaths of Euripides and Sophocles and are of non-Attic origin. The conventions of painting and of “narrative” in this medium determine that the painter is not even attempting to provide a photographic likeness of a given moment of a stage performance. Artists are often interested in scenes that were only reported on the stage, whether an interior action such as Medea’s killing her sons (cf. Trendall-Webster [*supra*, n. 2; hereafter TW] III, 3, 36, III, 3, 40), or an off-stage action such as the death of Dirce (TW III, 3, 14 and 15). Architectural details may be present in a form more complete than appeared on stage: for example, scenes that show a full temple in perspective in the background (TW III, 3, 9: temple of Apollo at Delphi; TW III, 3, 28: Artemis’ Taurian temple) are not evidence for a pedimented skene building with its axis toward the audience, but the translation of the scene of the play into the idiom of painted representation. On the other hand, the painters also employ a form of visual shorthand whereby a single column can evoke for the viewer a temple (TW III, 1, 12: again the temple of Apollo at Delphi; cf. III, 3, 20, III, 3, 21) or palace (TW 3, 3, 36, III, 5, 2, III, 6, 3; perhaps TW III, 3, 4) or tomb (TW III, 1, 6; cf. III, 1, 5, III, 1, 3)—structures that would be more fully represented on stage as painted decor or (in the case of a tomb) as a three-dimensional prop. Two of the commonest architectural features in the fourth-century South Italian paintings are the pedimented porch/doorway (e.g., TW III, 1, 17, III, 3, 5, III, 3, 32, III, 3, 45; four-columned porch [or palace-interior?] framing three figures within, TW III, 3, 26; a porch without pediment, TW III, 1, 17) and the pedimented naiskos (e.g., with two columns TW III, 5, 4 [apparently a representation of Achilles’ “tent”]; with four columns TW III, 1, 10, III, 1, 23, III, 3, 29, III, 3, 30a; naiskos with central columns [interior of palace] TW III, 5, 4). It is possible, as Trendall and Webster suggest in connection with TW III, 1, 10, that some of these naiskoi or porches reflect a form of stage building used in fourth-century Taras. But given the variety of forms, it is virtually impossible to decide when the depiction is based on an actual stage structure and when the artists are simply using a visual shorthand for a structure suitable to a mytho-[251]logical scene or using the architectural

form as a framing device.⁶ It is easier, of course, to make a connection to the theater when the stage floor is represented, as in TW III, 2, 8; but this painting contains only the posts of the stage background, with no indication of a roof.⁷

There remain to be considered two South Italian vases (Louvre, Bieber [*supra*, n. 2] fig. 115 = TW III, 3, 31; Würzburg, Simon⁸ fig. 3 and plate 10 = Bieber fig. 266 = TW III, 3, 43). These depict two pedimented porches containing doors, and a flat wall between the porches, surmounted in one case (Würzburg) by an apparently flat roof and in the other (Louvre) by what appears to be a sloping tile roof. These have been interpreted as representations of a theater-background with two projecting wings. Erika Simon, however, would understand these scenes not as evidence for three-dimensional constructions on the stage, but as reflecting flat panels painted to show the architecture in perspective (*skenographia*). Whatever interpretation of the paintings is correct, the relevance of the paintings to the fifth-century Athenian theater is doubtful. The Louvre vase has been called an “illustration” of Euripides’ *Iphigeneia in Tauris*, with one door representing the temple and the other Iphigeneia’s dwelling, but Euripides’ play makes no reference to and has no need of a second door and building (and so I assume for it a normal background with a single central door, that of the temple).⁹ The mythological scene depicted on the Würzburg vase cannot be securely identified.

In conclusion, the evidence of the vases provides very little help in reconstructing the skene building or its roof. It may suggest the possibility of a shallow pedimented porch at the central door,¹⁰ a feature that would not be inconsistent with a flat roof on the main structure behind it. But a full pitched roof, whether its axis is parallel to the skene front or perpendicular to it, seems incompatible with an upper acting surface. As with the archaeological evidence, the pictorial [252]evidence, doubtful as it is, must be supplemented and indeed overruled by the evidence of the texts.

A third form of evidence external to the dramatic texts is supplied by the “indirect tradition” in ancient writings that describe or comment on the theater. Ancient scholars of

⁶Pickard-Cambridge (*supra*, n. 2: 82–99) provides a review of the naiskos form in vases related to stories from the theater and is properly skeptical of their relevance to the Athenian theater, noting in particular that the naiskos form is used as a framing device and allusive symbol (a heroizing funerary motif) in scenes not connected with the theater (cf. its use in Tarantine funerary sculpture).

⁷Cf. also TW III, 1, 19 f. 9, which shows the posts of a tent and its cloth roof; TW III, 3, 40, which shows a flat ceiling above an interior scene.

⁸E. Simon, *Das antike Theater* (Heidelberg, 1972; 2d. ed. 1981), which I cite from *The Ancient Theater*, tr. C. E. Vafopoulou-Richardson (London, 1982). See also the fuller discussion in E. Simon and B. Otto, “Eine neue Rekonstruktion der Würzburger Skenographie,” *AA* 1973, 121–31.

⁹Iphigeneia lives in the temple: cf. *IT* 65–66 εἶμ’ ἔσω δόμων ἐν οἷσι ναίω τῶνδ’ ἀνακτόρων θεᾶς, correctly defended against emendation by Platnauer.

¹⁰A projecting prothyron is shown in Dearden (*supra*, n. 2) 35 and in Taplin *Greek Tragedy* (*supra*, n. 1) fig. 2 (unless it is meant to be a painted feature), but denied by Pickard-Cambridge (*supra*, n. 2) 75–100 and many others. If there was a porch, it would have to be very shallow in order not to interfere with contact between an actor trying to open the door and an actor on the roof who interrupts him.

drama from Aristotle on knew that there had been developments and changes during the fifth century in regard to actors and chorus, but there is little trace of any interest in or grasp of historical development in the appearance and design of the skene building. Aristotle, of course, mentions the introduction of *skenographia*; and the scholia contain meager comments about the eccyclema, crane, and actors who appear on the roof. But there is remarkably little trace in the scholia of any consistent attempt to visualize the setting and the action, and some comments are, if not simply confused, contaminated with the assumption of a later form of the theater.¹¹ Vitruvius (Book 5, esp. chs. 6–7) provides information from the point of view of a Roman architect and is not interested in historical or archaeological reconstructions, but rather in clarifying alternative contemporary building traditions: those of the Hellenistic Greek and the Roman styles. As has long been recognized, the elaborate structures he describes bear little resemblance to the fifth-century setting of Attic drama. Vitruvius makes only a few remarks about the stage and background. In discussing acoustics he mentions (5.5.7) that wooden theaters have several wooden floors (*tabulationes complures*), which provide a natural resonance; and although he may be including wooden floors in the auditorium-section of the building, his following remark on *citharoedi* who turn toward the wooden door(s) of the background (*ad scaenae valvas*: this may of course refer to a single doorway) to gain resonance when they want to sing more loudly perhaps suggests that the background itself had more than one floor (*tabulationes complures*). In connection with the Greek type of theater he uses the term *logeion* (5.7.2) and notes that it is narrower than in the Roman type and from 10 to 12 feet above the orchestra level. Finally, the rich storehouse of theatrical terminology found in Pollux's *Onomasticon* (4.106–54) offers tantalizing glimpses of a range of props and devices, but Pollux freely mixes terms of different dates and stylistic levels,¹² and—for the subject of most interest to us—when he speaks of the *distegia* or upper story, he can be convicted of anachronism, as will be shown below.

In view of the limitations of the other evidence, we are justified in turning, [253] for the problems of acting on high as for many other questions of stage production, to careful inferences from the texts of the dramas. Two general considerations relevant to interpreting this evidence deserve to be mentioned here.¹³ First, it is my assumption that

¹¹For the relevant scholia, see App. One, items I.A.2, I.A.5, I.B.1 with note, I.B.2 with note, II.A.2, II.A.3, II.B.3 with note; for a confused or anachronistic notion of an actor suspended “inside,” see the note on item III.A.3.

¹²It is characteristic that Pollux has several different terms, culled from a variety of sources, for theater devices that hoist or suspend, but does not indicate the relationship of these terms to each other except in the case of *μηχανή* and *κράδη*: in the classical period the term *μηχανή* was the formal one for the theater device (cf. Aristotle's use of the term, and the term *μηχανοποιός*), while *κράδη* was a colloquial or slang term for the same device (cf. comic attestations). *Γέρανος* meaning “crane” is not attested outside of Pollux, and Pollux is the only source for *αἰῶραι* in the sense “cables.” Cf. App. 1, VII.

¹³I treat all plays as equally relevant to reconstructing the setting for performance in the Theater of Dionysus, even though (1) *Clouds* as we have it was never staged and (2) it is uncertain whether Lenaean plays were performed in this theater or in a separate one (in favor of a separate theater see most recently N.

within the limits imposed by various unrealistic conventions Greek theater production did aim at a more or less naturalistic treatment of props and movements, and that clues in the texts usually do give us guidance in the reconstruction of the inscenation. This assumption is of course not immune to doubt, but it has been argued well elsewhere.¹⁴ To take a particular example, the crane may strike us as a clumsy and undignified apparatus (and indeed Aristophanes could already in parody adopt such an attitude toward it); but within the conventions of its use in tragedy, the crane represents a striving for “realism” in physical movement, a striving that suggests that mere imagination was not always thought to be sufficient for the representation of divine epiphanies or spectacular flight. Second, it is useful to keep in mind the versatility of both the skene building and the texts. At a single City Dionysia festival the skene building had to serve some 15–17 plays of three separate genres, and I suggest that there would be some hesitation to build any very elaborate *ad hoc* structure for one play and, accordingly, a preference for light, movable panels and accessories that need not continue to be present to create a distraction during another play (whether one’s own, a rival’s, or a play in a separate competition). Fairness in competition would be best preserved by such a policy. Conversely, by the last quarter of the fifth century,¹⁵ the plays themselves may in some cases have been written to be versatile, that is, capable of production both in the Theater of Dionysus in Athens and in other theaters (in Peiraeus, the demes, other Greek cities), some of which may not have had such a large budget for production or may have lacked, for instance, a crane. If a playwright determined that a god should appear on high, he may have planned to use the crane in the Theater of Dionysus but been quite prepared to have the same words performed elsewhere with the actor simply stepping forth on the roof. A poet who foresaw such possibilities may have striven to make do with the simple, common features of the stage building and may have avoided language that would fit only one possible inscenation.¹⁶ This may be one reason why, even if it can be agreed [254] that the god appeared above rather than on stage level, we may sometimes find no clues to help us decide whether or not the crane was used.

In Appendix 1 is presented an inventory of the appearances of actors on high in the extant plays and usable fragments, together with a complementary list of actors playing divine roles [and ghosts] who appeared at stage level. The inventory is divided into (1) cases that are widely accepted (and accepted by me) along with cases I would

W. Slater, “The Lenaean Theatre,” *ZPE* 66 [1986] 255–64). If a Lenaean theater existed, I assume that in the fifth century its skene and machines were similar to those of the Theater of Dionysus.

¹⁴See Taplin, *Stagecraft* (*supra*, n. 1) 28–39; Dover (*supra*, n. 2) 2–3.

¹⁵That is, it was an exceptional event (if it occurred) that earlier in the century Aeschylus produced *Persians* in Sicily as well as in Athens.

¹⁶For instance, flight is referred to in some epiphanies and not in others, even in cases where two scenes are precisely analogous in other respects (see *infra*, p. 279). Of course, as a reader points out, dramatic texts, in antiquity as in modern times, are easily adapted to the needs of a performance, so a poet may have had no need or desire to avoid overspecific language.

contemplate or endorse against the common opinion and (2) cases proposed by others that I reject. The questions I shall try to answer from this collection of data—such as what the upper level looked like, which gods appeared there instead of below, when the crane was or was not used—are so inextricably interrelated that it is not possible to keep them truly separate and build logically from one conclusion to the next. We are rather in the realm of controlled speculation, and it will be convenient to begin by considering whether any structures were erected on the roof regularly (that is, as a standard part of the skene constructed anew for each year's festivals) or on an *ad hoc* basis (for a particular play in a particular year).

Theaters of the Roman period had towering architectural backgrounds with several levels and with columns, niches, and openings in large numbers. Backgrounds of two stories are known or assumed in Hellenistic theaters.¹⁷ The fifth-century theater was clearly much simpler, but as with other details of theater design one must wonder whether there was not something in the wooden theaters of the fifth century that gave rise to the features we find attested in later theaters.¹⁸ It is interesting to note that Pickard-Cambridge, whose scepticism about the eccyclema in the fifth-century theater has been rejected by most later scholars, was prepared to assume (on the basis of evidence that he barely scrutinizes)¹⁹ that there was as a regular part of the skene building an upper story set back from the plane of the main story's facade, with a terrace in front to provide room for acting on the roof of the main story. Various general considerations seem to me to militate against such a view. Most plays make no use of or reference to a second story. That the action is frequently represented as occurring before a temple suggests a structure readily identified with the single-story form of a temple. The "illustrating" vases, for what they are worth, show single-story architectural features representing temples and palaces. If an actor appeared on a terrace in front of the second story, this would create visual confusion when the character is supposed to have taken the highest vantage-point for observation (as in *Agamemnon*). If we are permitted to assume a crane pivoted [255] on a base concealed behind the skene-terrace (see App. 2) and to assume (as argued below) that actors on the crane could alight on or even dismount onto the roof (presumably in the center, toward the front of the roof, for ease of interaction with characters down below), then safe and efficient use of the crane requires a lack of vertical obstructions on the craneward side of the roof and probably at the back of the roof as well. Any substantial structure on the roof (such as a partial second story) would make the crane operator's task much more difficult and the actor's stunt much more hazardous.

¹⁷Reconstructions are most conveniently collected in Bieber (*supra*, n. 2) ch. 9.

¹⁸See n. 3, above.

¹⁹Pickard-Cambridge (*supra*, n. 2) 54, 67, 267. His conclusion is not carefully argued for, but appears to be based on the appearance of the word *διήρη* in Eur. *Phoen.* 90 (which is not clear and not decisive: see *infra*, n. 26) and Plato Com. fr. 112, on Pollux's comment on the scene in *Phoen.* (which I show cannot be trusted), and his (disputed) interpretation of *Eccl.* 884–995 (see *infra*, n. 29).

If the skene building was actually as long as Pickard-Cambridge and Newiger suggest, a second-story structure on the side opposite the base of the crane, out of range of its arc of movement, would not cause obstruction.²⁰ One cannot, of course, rule out the possibility that a second-story structure was present yet ignored by the audience except when it was actually in use; but this seems an uneconomical hypothesis. In order to move beyond general considerations, we must now consider the few tragedies and comedies that seem to require something other than a flat, featureless roof platform, and we may start with those that have an explicit or implicit connection with Pollux's description of *distegia* or "upper story."

The case of *Phoenissae* 88ff. seems to me most important, since the scene is explicitly cited by Pollux and yet Euripides' text contradicts Pollux's staging and therefore casts doubt on the value of his evidence.²¹ Pollux 4.127–132 is a list of theater terms and appurtenances that are manifestly relevant for the most part to the late Greco-Roman theater and not to the Classical Athenian theater. After mentioning *σκοπή* ("lookout point"), *τείχος* ("city wall"), *πύργος* ("tower" or "turret"), *φρυκτώριον* ("fire-signal station"), Pollux continues *ἡ δὲ διστεγία ποτὲ μὲν ἐν οἴκῳ βασιλείῳ διήρης δωμάτιον οἶον ἀφ' οὗ ἐν Φοινίσσαις* (88ff.) *ἡ Ἀντιγόνη βλέπει τὸν στρατόν, ποτὲ δὲ καὶ κέραμος, ἀφ' οὗ βάλλουσι τῶι κεράμῳ* (cf. *Or.* 1567–70?²²). *ἐν δὲ κωμωδίαι ἀπὸ τῆς διστεγίας πορνοβοσκοί τι κατοπτεύουσιν ἢ γράδια ἢ γύναια καταβλέπει* (cf. *Acharn.* 262, *Eccl.* 884–975?) ("the *distegia* [second story] is sometimes a second-story room in a royal palace, such as the one from which in *Phoenissae* Antigone views the army; sometimes also a tiled roof, from which they pelt [someone below] with the tile; and in comedy it is from the *distegia* that brothel-keepers spy out something or old women or women [wives?] look down"). According to Pollux, the scene in *Phoenissae* involved a second-story *room*. The text of the play, however, suggests that Euripides intended a different upper-level inscenation. A major point of the scene is that Antigone is to [256]be allowed to view the Argive army without compromising her maidenly modesty: the Servant must ascertain that the position from which she shall look is not currently exposed to the eyes of strangers in the street (i.e., stage, orchestra, and eisodoi). The first speeches of the scene indicate that Antigone cannot be seen from the street during 88–102 and that she first has a view of the distant scene at 109. On the other hand, the Servant is visible from the street earlier than Antigone and can observe both the street and the distant scene by line 99. Thus the Servant has, by line 99 (and probably before

²⁰See App. 2 for consideration of some possibilities.

²¹Pollux's statement is treated as a reliable indication of the original staging by, e.g., Pickard-Cambridge (*supra*, n. 2) 54, Dörpfeld and Reisch (*supra*, n. 2) 205, Navarre (*supra*, n. 2) 134–36; but rightly rejected by, e.g., Arnott (*supra*, n. 2) 42–43, J. Roux, *REG* 74 (1961) 35 n. 2.

²²Throwing roof tiles sounds like comic business, but since *ἐν δὲ κωμωδίαι* follows, perhaps Pollux had a tragic example in mind; if this was *Orestes*, then what is said is somewhat inaccurate (*Orestes* threatens to throw, and does not actually do so; and what he threatens to throw is a coping stone, not a roof tile).

beginning his speech at 88), himself ascended the ladder (referred to in 100: its possible location will be discussed later) and reached the position in which Antigone would be at risk of being seen; and he speaks 88–102 to Antigone while she is not yet visible from the street (stage level) and while the audience (or at least that part of it seated higher in the theatron) either does not see her or sees only her head (that is, the actor is already at 88 partway up the unseen ladder, but must leave the final steps to be negotiated after line 100). She climbs into full view during lines 100–108. At the end of the scene the Servant tells Antigone “enter the house” (193). From all this it is clear that the Servant and Antigone are not *in* a visually-represented upper-story room, as Pollux alleges; rather they emerge onto an open platform from below.²³ In fact, the movements indicated by the text seem to me to militate against the view that an upper-story building or room was a regular feature of the skene building. If a second-story room with window were permanently available, the window (treated perhaps as that of a tower-room) would have been the logical place from which to view the Argive army, and Euripides would have had no need to introduce a ladder and call attention so laboriously to Antigone’s climbing in 100–106.²⁴ By the same token, this [257]scene, by its insistence on the process of climbing and visibility, implies that there was no other concealing structure available on the roof for this play.²⁵ (And this negative implication probably extends to an off-center second story that would not obstruct the crane.) The audience sees only the usual palace-facade and, guided by the words and actors’ position, understand that Antigone and the

²³Nor can we save Pollux’s architectural assumption by following the stage directions suggested by J. Geel, *Euripidis Phoenissae* (Leiden, 1846): on this view, both actors appear at an upper-story door to a terrace, the Servant steps forward to look while Antigone hangs back, then both ascend a visible ladder to the roof of this upper story (cf. Navarre [*supra*, n. 2] 134–36, who has the actors emerge from the palace door and climb a ladder from stage level to the roof terrace). These inscenations do not fit the text either. The Servant is going out first to see whether anyone is in sight of the lookout place: this intention is frustrated if he is not in fact in the final lookout place. Moreover, Geel assumes that the Servant too is climbing during 100–105. If so, how can he see the plains already at 101? If, on the other hand, he can see the plains and the army before he climbs the ladder (but Antigone reacts to the sight only after she climbs), why would they need to climb the ladder at all? Geel’s interpretation also depends on a false punctuation of 103–5 (comma after *ἀπὸ κλιμάκων* instead of before it). There is one way to match text to scenic arrangements with an upper-story structure: Servant and Antigone appear at an upper-story window, Servant steps out the window onto a balcony several feet higher than the roof-level, speaks, and then helps Ant. climb out. In this *διῆρες ἔσχατον* means “outermost upper-story room” and refers to the room, not the balcony. But why would Eur. have designed such a set when, once granted an upper-story structure, he could have had the scene played from the window, or he could have had a door instead of the window and made the actors step out onto the roof for a better view?

²⁴If we abandon Pollux and instead of a second-story room we posit a smaller windowless turret to the roof of which the actors climb from inside, Euripides’ use of *διῆρες* (90: see *infra*, n. 26) may seem clearer; but such a structure is not natural to domestic architecture, and it seems both illogical and uneconomical to have a second story at all if it contains no windows.

²⁵Hourmouziades (*supra*, n. 2) 30–32 makes a similar argument against Navarre, but believes that there may have been a “superstructure” on the upper level from which the actors emerge. See further below on means of access to the roof-level acting area.

Servant are on the roof at the edge of the palace.²⁶ Pollux's comment on *Phoenissae* is not valid evidence for the fifth-century theater.²⁷

There is, however, at least one extant Classical (but not fifth-century) play whose text seems to support the representation of a second story. In Aristophanes *Ecclesiazusae*, lines 884–975, the young woman is almost certainly at a higher level, for she is asked to descend to let her lover in (καταδραμοῦσα τὴν θύραν ἄνοιξον τήνδ' 962–63) and takes some time to do so: if she is at roof-level, she is more probably looking out from her upper-story window (cf. Pollux's γύναια καταβλέπει) than standing on an open terrace or a terrace in front of a second-story room (note ἀπέρχομαι 936 rather than e.g. εἰσέρχομαι or κατέρχομαι). Yet even in this case there are those who believe that the window is merely one (normally?) present high in the facade of the single-story skene building.²⁸ The position of the old woman in the same scene is disputed: symmetry would be served if she too were at a window during 877–946 (cf. again Pollux's γράϊδια ... καταβλέπει), and εἶμι τηρήσουσ' 946 and her absence during 947–975 could cover a movement from above down to her door. But other verbal clues point rather to her being at the door on stage level from the start of the scene: note *Ecclesiazusae* 879, ἔστηκα; 881–882, ὅπως ἂν περιλάβοιμ' [258]αὐτῶν τινα παριόντα, 884, παρακύψασα.²⁹ Among the fragments of comedy, Plato Com. fr. 112 ὀρᾶτε τὸ διήρες ὑπερώϊον also implies a visible upper structure.³⁰ No upper-story window is required, however, in

²⁶ In *διήρες ἔσχατον* (*Phoen.* 90) the adjective means not “highest” but “outermost,” implying an unobstructed view (rather than “furthest [from the maiden-chambers],” as suggested by Roux, *REG* 74 [1961] 34–34, who rejects Pollux and believes the πύλωμα—central portal—represents guards' quarters, to the roof of which Antigone climbs from behind). What precisely the audience imagines depends on the sense of *διήρες*, which is hard to ascertain. I shall discuss this in more detail elsewhere, but give here the two main possibilities. (1) ἐς *διήρες ἔσχατον* could mean “to the outermost two-storied part of the palace” (implying height and unobstructed view), and when the audience sees the actors on the skene-roof they imagine this to be the roof of an (unrepresented) upper story. (2) If *διήρες* had come to mean anything above the lower story, whether an upper chamber or a roof-top terrace, then the meaning could be “to the outermost rooftop terrace.”

²⁷The comment may be based on carelessness, but it is possible to save Pollux's evidence by applying it to a post-classical staging of *Phoenissae*: if lines 100 and 103–6 are omitted and 193–201 either omitted or revised (193–94 would need to be altered), the scene could be played from the window of a second-story room. My argument about the fifth-century staging is, of course, dependent on the belief that *Phoen.* 88–201 are transmitted basically as Euripides' wrote them.

²⁸So, e.g., Robert (*supra*, n. 2) 434 and Dearden (*supra*, n. 2) 31 and n. 40, 176; Dover (*supra*, n. 2) 15 argues that the women are at *two* windows, but does not specify where these windows are represented. Note that in *Wasps* the window from which Philocleon tries to escape is high enough to suggest that he needs to use a rope to lower himself. In this case *καταδραμοῦσα* would imply for the audience (what is not implied, I think, in the scene of *Wasps*) that the Girl is in a second-story room, even though the skene-facade has its usual single-story appearance.

²⁹Cf. Ussher's commentary p. xxxii, against Pickard-Cambridge (*supra*, n. 2) 67, and E. Fraenkel, “Dramaturgical Problems in the *Ecclesiazusae*,” in *Greek Poetry and Life* (Oxford, 1936) 257–76, who both have the women stand outside on the roof terrace in front of the alleged second-story structure.

³⁰See App. 1, V.C.2.

Acharnians, where Dicaeopolis' wife is told θεῶ μ' ἀπὸ τοῦ τέγους (262), or in *Wasps*, where the net-covered window used in 156–73 and 317ff. is at a high level (cf. 379–80) but presumably on the main story (Philocleon moves quickly from the window to the door at 173). Both Dicaeopolis' order to his wife and the attempt of Philocleon to escape through the roof of the kitchen in fact presuppose a single-story house,³¹ as does the fact that Strepsiades' setting fire to the roof beams in the finale of *Clouds* has as immediate effect on those inside.³² If we combine the rarity of attestations of second-story rooms in comedy with the implication of their absence in texts such as *Acharnians* (why watch from the roof when one can watch from a second-story window at the same height?), it again seems reasonable to assume that such a structure was not regularly represented in the classical theater. For the occasional comic scenes it would suffice to erect at the front of a part of the roof platform a temporary panel representing a wall pierced by a window. Other *ad hoc* structures created for actors appearing on high will be mentioned below.

I conclude, then, that both general considerations and the evidence of the plays themselves make it probable that the fifth-century skene was routinely constructed as a one-story building with a virtually bare flat roof. In a later period, when tall backgrounds with multiple levels and niches or openings (*θυρώματα*) had been developed, the first level (by this period several meters higher than the orchestra level) would represent the street or piazza level before a house or houses or temple; niches on the next level would be used (and decorated) to represent a roof of a human dwelling or the second-story façade of a house or (if there were no third level) a site for divine epiphany; if any theaters had a third level, or simply a single practicable niche higher than the second level, this would have been reserved for divine appearances.³³ I would suggest that the terminology cited by Pollux arose in the post-Classical theater. The separate terms *διστεγία* and *θεολογείον* would then have referred to distinct [259]locations or distinct decors above the main level of the background: perhaps *θεολογείον* (extant nowhere except in Pollux) arose only in contradistinction to *διστεγία*.³⁴ In the earlier theater a single, undifferentiated upper level will, I suggest, normally have served both humans and gods and will not, perhaps, have had any technical name: Aristophanes' characters

³¹Pickard-Cambridge (*supra*, n. 2) 61 attempts to evade the implications of this scene by claiming that “on one side was a *lower building* containing the kitchen” (emphasis added). But Bdelycleon is simply on the roof of the main (only, I would say) building, and that is where the chimney scene is played.

³²They either scurry out the door, speak from inside (through the opening in the roof that Xanthias and Strepsiades have opened), or from a window (assumed by Dearden [*supra*, n. 2] 31 and n. 38, 154, and T. Gelzer, *Aristophanes* [Stuttgart, 1971] 1513).

³³On the question whether there was sometimes a door for divine appearances on the third level, cf. Bieber (*supra*, n. 2) 170 and figs. 600–602, 674, 679, 695, 715, 729, 736 (in many cases the third level seems to have been purely decorative, without access for actors).

³⁴Under the influence of Lucian's phrase θεὸν ἀπὸ μηχανῆς ἐπισκυκληθῆναι (*Philopseudeis* 29), some scholars treat the theologeion as a mechanical device, such as a platform protruded from a high niche; but neither Pollux 4.127 nor 4.130 necessarily implies a moving device. The notion that the god is thrust forward perhaps belongs to the later form of theater in which there was a lofty background with niches.

refer to it simply as τὸ τέγος.

Taking the flat roof as a probable norm, therefore, we may now pursue some of its ramifications for production. We must keep in mind that the roof of the skene building would have been in full view of a large part of the audience, who could look down on it from above. How did actors make an entrance onto the roof? In considering possible answers to this question, I assume that behind the skene building there was a drop of about one story to the roof of the hall built against the retaining wall of the theater rather than that the hall was built tall enough to have a common roof level with the skene building.³⁵ There are then at least five ways we can imagine an entrance:³⁶

1. Trapdoor: an optional opening in the roof platform would have been accessible from a stair or ladder inside the skene building.

2. Staircase type A (external, top unconcealed): a stair or ladder built against the back of the skene building would have allowed an actor to climb up from the roof of the hall, becoming visible to some of the audience as soon as his head reached rooflevel.

[260]3. Staircase type B (internal, top concealed): there could have been a covered staircase inside the skene building with its canopy projecting above the roof-level (presenting at minimum a triangular profile to the audience), allowing the actor to appear suddenly by stepping out of

³⁵The hall/stoa behind the terrace (retaining) wall H-H was built in stone at the same time as the terrace-wall and platform T (so Dinsmoor [*supra*, n. 2] 319–23, against Pickard-Cambridge [*supra*, n. 2] 22, 24–28; the date of construction was ca. 420 according to Dinsmoor). Its floor level was 8' 2" [or 2.5 m] below the level of the orchestra terrace (and so, if there was a low raised stage, perhaps 10–11 feet [or 3–3.66 m] lower than the acting level). Dinsmoor and others believe that stairs within the hall led to platform T; but Newiger has expressed doubts about these stairs. I believe that we may assume that a wooden structure preceded the stone hall, i.e., that there was already some area for storage and work down behind the terrace, out of sight of the audience (cf., e.g., the sketches in Melchinger [*supra*, n. 2] 48–49). It is unclear how tall the stone hall (or its wooden predecessor) was. If there were stairs from hall to T, then clearly the hall's roof level was higher than T, but not necessarily by more than, say, 4–6 feet [or 1.2–1.8 m] (unless the stairway itself had a separate canopy rising above the main roof of the hall). If the roof of the hall were at the same height as the roof of the skene building, there would be a single roof surface (deeper than the depth of the skene alone), and a ladder or stairs at the rear going down the facade of the hall would be about two stories high. A design in which the skene roof is several feet (or a whole story?) higher than the roof of the hall would be more convenient in several ways: the stairs or ladder would be shorter; an actor could get around to an eisodos more quickly (see below, p. 262, on Bdelycleon in *Wasps*); the crane support and its operators could be on the roof of the hall, and the crane could be partially concealed and also less cumbersome because its pivot-point is closer to the front of the skene (see App. 2). Most of my arguments about the use of the roof do not, however, depend on the relative heights of skene roof and hall roof.

³⁶Cf. Müller (*supra*, n. 2: 151–53), who considers three methods (ladder from behind, crane, and entry from concealment on the higher level).

the darkness of the stairway tunnel.³⁷

4. Staircase type C (external, top concealed): there could have been a small concealing panel erected a few feet from the back of the roof in order to conceal the actor who had climbed up from the roof of the hall: he would wait unseen until the proper moment for stepping out into view.

5. Crane: the actor could mount the crane out of sight behind the skene building and be hoisted over the back wall, swung through the air to represent flight, and deposited on the roof.

At least three of these forms of entrance can, it seems, be established with the help of two texts that imply two separate means of access in a single scene. First, the scene in *Wasps* where Philocleon attempts to escape through the chimney requires the trapdoor (perhaps with an added prop representing a chimney top, perhaps without it): the actor pokes his head out to deliver his jokes in dialogue with Bdelycleon and is forced back down by the latter, who piles the chimney-cover and a piece of wood over the opening. Later in the scene Bdelycleon must get down from the roof by a different way,³⁸ and so the ladder or staircase at the back of the roof is required. The character is thought of as descending into the street behind the house and running around to the front of the house, so staircase A is most appropriate. Second, the shared entrance and separate departures of Iris and Lyssa in *Heracles* (discussed more fully below) require both the crane for arrival and a staircase or perhaps trapdoor for Lyssa's departure: when Iris flies back to Olympus (still on the crane), Lyssa disappears into the palace. Since she is a divine character and announces her own impending invisibility, it makes no difference to the audience which means of departure [261](other than the crane) she uses: if by a staircase of type A or C, she is imagined to disappear directly into the courtyard, where the sacrifice is taking place; if by a staircase of type B or by the trapdoor, she may be imagined to go into a room of the palace.

³⁷The desire to conceal the arrival of the actor is one principal motive for Hourmouziades' inclination (*supra*, n. 2: 29–34) to assume a small “superstructure” built on the roof: he believes that entrance and exit through a door in a superstructure would be “more dignified” than through a hole in the roof. Another possibility for concealed access from within would be a two-story paraskenion adjacent to a one-story central portion of the skene: an actor could emerge suddenly from a door on the side of the upper paraskenion. I doubt that such a structure existed in the fifth-century theater, but for some reconstructions assuming a two-story paraskenion with side-door to the roof, cf. Bieber (*supra*, n. 2) figs. 241, 242. Dörpfeld and Reisch (*supra*, n. 2) 215–16 suggest that the gods must appear from a door in a central upper story or from a second story of a paraskenion; Bethe (*supra*, n. 2) 204–29 also assumes tall paraskenia, partly in order to carry beams for an unlikely form of crane (see App. 2). Cf. also the use of the stage-level paraskenion door (normally obscured by shadows) for divine entrances advocated by Melchinger (*supra*, n. 2) 132, 155.

³⁸Dearden (*supra*, n. 2) 30 would have Bdelycleon go down through the same opening used a moment earlier in the chimney scene. This is unacceptable, since the audience has just been shown that this is a way into the house.

In scenes where human characters appear on the roof, it is usually impossible to tell from the texts whether the trapdoor or one of the types of staircase is used: the case of *Wasps* is fairly clear, but for the wife in *Acharnians*, or Orestes (et al.) in *Orestes* there seems to be no way to decide. In *Phoenissae* a ladder is actually referred to by the characters, but it is out of sight: if a trapdoor is used, the ladder (κέδρου παλαιὰν κλίμακα 100) is to be imagined to be inside a room of the palace; if the actors enter at the back of the roof, the ladder is to be imagined as in the courtyard of the palace.³⁹ If we favor the most economical hypothesis, then trapdoor, crane, and staircase A would perhaps suffice for all fifth-century plays.⁴⁰ The staging of *Phoenissae* 88ff. described above seems to me to argue against any concealing structures such as staircases of types B and C would provide. Although it might be argued that Euripides may have decided to ignore staircase C (external, with panel) because the concealing panel was considered suitable, or conventional, only for divine epiphanies, it does not seem to me likely that he would have written the scene the way he did if staircase B (internal, with canopy or “superstructure”) were available. Staircase B or C may, however, be deemed necessary by scholars who judge the element of surprise to be important to particular entrances upon the roof but decline to use the crane in support of that effect. Unfortunately, the very question of the representation of a surprise entrance is clouded with uncertainties. It is clear enough that the dramatists, particularly Euripides, valued the dramatic effect of surprise; but it is unclear how far realism was necessary to such effects and how far convention could overcome the incongruity between the real slowness and visibility of an entrance and the representation of suddenness and surprise. We shall return to this question later, when we consider in more detail the use of the crane and the controversy over how gods appear on the roof.

One last detail is relevant to the means of access to the roof: movements from roof to stage level. In *Lysistrata* the roof represents a parapet over the Propylaea. In the famous teasing scene Myrrhine is urged to come down to stage level to join Kinesias. She agrees at line 884 that she must go down and is on stage embracing her baby at 889–90: Kinesias has only four lines to cover the time during which she descends and emerges through the central door, so the ladder or staircase must have been very easily negotiable and deposited the actor [262]close to the skene door. We do not, of course, know how much empty time there may have been between 884 and 885 or between 888 and 889; but I do not believe it can have been very lengthy, for Aristophanes could easily have made a joke about the length of the wait rather than allow his actor to stand speechless for a

³⁹But the fact that the ladder is of cedar, a wood used for expensive fixtures, perhaps makes it less likely that we are to think of a ladder exposed to the elements. What the audience imagine the layout of the palace to be also depends on the sense of διήρες (see above, n. 26).

⁴⁰The proposed trapdoor is *proved* for only one play, so a reader comments that it might be deemed an *ad hoc* arrangement for *Wasps* only rather than a regular feature. There is nothing to disprove this idea, but on the convenience of the trapdoor, see next paragraph.

noticeable time. The covering dialogue in a similar scene in *Ecclesiazusae* is much longer (976–1036), but there Aristophanes is exploiting fully the comic potential of the Old Woman’s intervention and not merely giving an actor time to get from one place to another. In *Wasps* a dialogue of 12 lines covers the time it takes Bdelycleon to get down from the roof and reappear around the side of the skene building. For movement from onstage to the roof, we have the case of the silent extra playing the wife in *Acharnians*. She may have been seen at the door of the house when the procession came out (241); she is present to hand a ladle to her daughter at 245f.; but at 262 she is told to watch from the roof. If she is already there at 262, as seems likely, then she has reached her position within 15 lines.⁴¹ No other scenes seem to require such rapid movements to or from the roof.⁴² These scenes suffice to indicate that such movements could be carried out fairly quickly. The example of *Wasps* seems to me to confirm that the ladder at the back went down to the roof of the hall, not down to the ground level on which the hall stood; and the scene in *Lysistrata* would have been easier, I suspect, with a trapdoor into the skene instead of a ladder at the back.

I have argued so far for a “minimalist” treatment of the roof and its means of access. It is time to review the cases in which the requirements of a play are more complicated and to show that *ad hoc* modifications would have sufficed and that the “minimalist” view need not be called into question because of such scenes. The finale of *Orestes* has already been mentioned in connection with Pollux’s remarks on *διστεγία* and the means of entrance of the actor Orestes and mute players Pylades and Hermione. The trio is atop the house (*δόμων ἐπ’ ἄκρων*, 1574) right over the central palace door at which Menelaus stands; they are, as it were, manning a parapet (*πυργηρουμένους*), and Orestes threatens to break the coping stone on the front edge of the roof and hurl a piece at Menelaus’ head.⁴³ By his position, by the stopping action of his initial utterance, and by his attempt to steer the drama to a conclusion, Orestes is, as it were, adopting the role of a [263]*deus ex machina*, an attempt that, like most of his endeavors in the play, is doomed to failure. So far, the scene requires only a flat single-story building. But the arrival of Apollo as the real *deus ex machina* requires us to ask whether there may have been an additional structure on the upper level, for he cannot, I believe, have alighted on

⁴¹The order is simply *θεῶ*, not something like *ἀναβᾶσα θεῶ*. If she were still on stage at 262, she would have to move quickly or she would miss a good deal of the procession (which lasts 18 lines, to 278). She must leave the roof at the same time the daughter and attendants flee back indoors (during 280–85).

⁴²According to the scholiasts, *Phoen.* 88ff. would also be relevant, for they allege that the actor playing Jocasta, who went into the palace after 87, must be given time to change costume for appearance as Antigone at 103 (he would also have to get to the ladder or stair). But there is no necessity that the same actor play both roles, and there are other reasons for the way Euripides delays Antigone’s appearance.

⁴³If pelting someone from the roof was standard slapstick in comedy (see *supra*, n. 22), Orestes’ threat is another comic element in this play that toys with genre boundaries.

the roof already occupied by the human characters.⁴⁴ How is this arrival staged? Willink assumes that Apollo and Helen simply climb from behind onto a platform separate from the main roof (and presumably higher than it?), which he identifies with the *θεολογείον* of Pollux.⁴⁵ But there is no reason, apart from this scene, to believe that gods on high appeared or alighted anywhere but on the roof over the central door, the same place where Orestes (or, with similar effect, Medea, discussed below) appears: indeed, the dramatically telling *deus*-like effect of Orestes' actions (as of Medea's) depends in part on the human character's being placed exactly where a *deus ex machina* is usually placed. Thus, if Apollo appeared on a platform, I would argue that it was an *ad hoc* construction for this play, not a standard feature of the skene building. A second possibility is to assume a recessed second story: then Orestes et al. would be in front of it on a roof-terrace (which is like a parapet from Menelaus' point of view), and Apollo would appear on top of the second story.⁴⁶ But again Euripides' manipulation of Orestes' *deus*-like attributes is weakened if Orestes is not in the position usually taken by gods, and it may be noted that the humans are said to be *δόμων ἐπ' ἄκρων*, not simply *ὑπὲρ δόμων*.⁴⁷ Finally, Apollo (and Helen) could arrive by crane and either (as I am inclined to believe) stay suspended in the air during the rest of the scene (66 lines in duration, compared to almost 100 lines for Trygaeus in *Peace* 80ff., 66 lines for Iris in *Birds* 1196–1261,⁴⁸ and an unknown length for Perseus in the opening scene of *Andromeda*) or alight upon an *ad hoc* structure built at one corner of the skene building.

In weighing the choice between a lengthy suspended appearance and a separate *ad hoc* platform in *Orestes*, one may take into account, apart from practical considerations discussed in Appendix 2, another case where two different upper-level actions were staged in one play. In Euripides' *Supplikes* a human character (Evadne) and a god (Athena) appear on high in different scenes. It would not be impossible to use the roof in both scenes, but as Collard argues in his commentary (1.15–16), it would be better for Evadne to jump to her death from a [264]structure representing a cliff at a level higher than the roof (where Athene later appears). Evadne's structure will have required *ad hoc* scene-painting (to represent a crag) and an *ad hoc* method allowing the actor to jump and land safely behind the skene building, out of sight of the audience. So it is reasonable to

⁴⁴Virtually all scholars accept this point, but Pickard-Cambridge (*supra*, n. 2) 56 n. 1 contemplates a staging in which Apollo is lowered by the crane until his feet touch the roof—apparently because he is hesitant to have the actor left suspended.

⁴⁵Cf. also M. L. West, *Euripides. Orestes* (Warminster, 1987) 38, who mentions the *theologeion* (“a platform of which the support is concealed by a screen painted to resemble the sky”) as a less likely alternative to use of the crane.

⁴⁶Or, if one believes in a two-story *paraskenion*, Apollo could appear on its roof.

⁴⁷If the Phrygian slave jumped from the roof, it is unlikely that a second story was shown. But I do not believe the Phrygian used the roof: see App. 1, II.A.2.

⁴⁸The Muse in *Rhesus* could also stay suspended, but she probably alights on the roof, even though a tent is represented (see *infra*, pp. 278–79).

assume that the structure itself was likewise created *ad hoc* for this play. In *Orestes*, on the other hand, once it is granted that an actor can stay suspended for the length of time required, it seems more economical to use the existing technology rather than build an *ad hoc* structure.

Although we are inevitably in the realm of a weighing of relative probabilities, it seems to me better to assume a flat-roofed single-story skene building than to believe that *Orestes* and *Supplikes* happen to be our only surviving evidence for two permanent upper-level acting areas in the fifth century, the precursors of Pollux's *διστεγία* and higher *θειολογείον* (but not yet rigidly distinct, since in *Supplikes* Athena would probably appear on the lower level, Evadne on the higher, whereas in *Orestes* Apollo would be on the higher level). Such complexity seems to me uneconomical in a theater that lacks an elaborate background, and I have argued that the dramatic effects exploited in the *τειχοσκοπία* of *Phoenissae* or in the finale of *Orestes* (and similarly in *Medea*) depend upon a simple open roof and the undifferentiated use of the upper acting space by either humans or gods in appropriate circumstances.

Two other tragedies that present special problems relevant to the question of the simplicity or complexity of scenic arrangements at rooflevel are *Prometheus* and *Medea*. *Medea* presents fewer problems and can be considered first. There is no announcement of Medea's appearance, nor even any explicit reference in the text to Medea's higher position or indeed to flight, but under the influence of the ancient tradition,⁴⁹ it is more or less universally accepted that she appears on high. A radical sceptic could, of course, entertain the view that Medea and the chariot emerge from the palace-door and that there is a magical power in the chariot that prevents Jason from approaching.⁵⁰ One would, however, expect at [265] least a reference to the alleged *φάρμακον* for the audience to understand why Medea is untouchable, and such a staging loses the important visual

⁴⁹A century after the original production Aristotle spoke of the solution of this play as an improper solution *ἀπὸ μηχανῆς* (*Poetics* 1454^b1: cf. App. 1, VII.8), but in his terminology *μηχανή* seems to refer widely to any supernatural intervention (cf. D. W. Lucas' note *ad loc.*), so we cannot be absolutely certain that he believed the crane was used in *Medea*. The scholia on *Med.* 1317 and 1320 explain that Medea appears on high, but they may simply be inferring from the text (as we do) and even if their remark is based on knowledge of theater practice, that practice is too late in date to be evidence for fifth-century production. Σ1317 says ἄνω ἐπὶ ὕψους *ἔστῶσα* ταῦτα λέγει, which might imply no crane; Σ1320 says ἐπὶ ὕψους γὰρ παραφαίνεται ἡ Μήδεια, *ὄχουμένη* δρακοντίνοις ἄρμασι καὶ βαστάζουσα τοὺς παῖδας, which might imply the crane. But it is dangerous to press the language of scholia.

⁵⁰For Jason's inability to reach Medea, cf. 1320, 1322, 1399–1412. The sceptical view is developed by Bethe (*supra*, n. 2) 142ff. (*Medea* and the chariot emerge on the eccyclema); Bethe argued (130ff.) that gods appeared on stage level with humans until the mid-420s and that the crane was introduced after 428. Paley in his note on *Medea* 1317 refers to and rejects a possibility of staging with the eccyclema, so the view advocated by Bethe is older. A stage-level inscenation is worked out in detail in Robinson Jeffers' free adaptation (1946) of Euripides' play: Medea can confront Jason at the door because of venomous guardian snakes, and at the end of the play she walks off with the bodies, having announced that "the chariot is at the gate." Jean Anouilh's adaptation (also 1946) does without the escape entirely, for his Medea commits suicide and immolates her body together with those of her sons.

impact of Medea raised to a position of superiority in her second “debate” with Jason and the significance of this position for the quasi-divine (and also inhuman) status of Medea at the end of the play.⁵¹ On the other hand, if the chariot appeared on high, by whatever means, it would obviously be understood to be capable of flight even without a verbal reference to flight.⁵²

The prop-chariot in the finale of *Medea* will have been fairly substantial, as it holds not only the actor playing Medea but also two dummies (or, less likely, child-extras) representing her dead sons. How the chariot came into view on the roof (with or without the crane) is the truly interesting question. I argue below (in a more general discussion of the crane) that any general scepticism about the crane or reluctance to posit its use is unfounded, so that its use in *Medea* in the year 431 is not at all problematic. I also show that lack of announcement is no obstacle to positing use of the crane: indeed lack of announcement is characteristic of forceful interventions of a *deus* or *deus*-like figure. If Medea’s chariot is swung onto the roof with the crane, her sudden appearance can be well managed (given a certain type of crane: see App. 2), and the weight of one actor with two dummies in a prop-chariot should have been within the capabilities of the crane, which is known to have carried at times two actors or one actor with stage-Pegasus or comic equivalent. The end of the scene provides no clear clue to confirm that the crane was used. Medea mentions her intention to take her sons’ bodies to the precinct of Hera Akraia and to go herself on to Athens, but there is nothing in Jason’s last speech that requires that she be seen flying off during his speech. It is inconclusive that she is still in range to be addressed in ἀποκωλύεις 1411, since this could be directed to her as she departs. Thus the words themselves will fit either departure on the crane or a “canceled exit” (that is, the play simply ends with actors in place, and subsequent movements are not part of the dramatic performance). But what are the alternatives to use of the crane?⁵³ A chariot (presumably bulkier and sturdier than what one would suspend from the crane) could perhaps be rolled up a ramp behind the skene building. But how would the uphill movement and turn into position above the door be managed? One could not use horses or mules, as for a stage-level chariot: the space is too small, the stunt too unsafe. A prop carried along by the walking actor would be possible, but very clumsy, and the appearance would be slower than with crane. [266]Alternatively, moving out from concealment on the roof level would be more rapid and so more satisfactory visually. At the minimum the producer would need a screen, presumably to one side, concealing an area of roof large enough to hold the chariot (present from the beginning of the performance): at the proper moment the chariot could be rolled (by the actor?) to center

⁵¹See in particular M. P. Cunningham, “Medea ΑΠΟ ΜΗΧΑΝΗΣ,” *CPh* 49 (1954) 151–60.

⁵²One hypothesis to the play says ἐπὶ ἄρματος δρακόντων πτερωτῶν. A South Italian “illustration” shows serpents (no wings): Bieber (*supra*, n. 2) fig. 121.

⁵³For a proposal to place Medea on the roof but without use of the crane, cf. D. W. Lucas’s note on Arist. *Poetics* 1454^b1.

and forward on the roof. Such a screen would be similar to that proposed in connection with staircase type C above, but whereas the latter could have been virtually flush with the rear wall of the skene building, in the *Medea* a screen would have to be at least 5 feet [or 1.5 meters] or so from the rear edge in order to accommodate the width of a small chariot.⁵⁴ Another possibility for entrance from concealment on the roof is to have a background panel erected several feet forward from the rear of the skene building⁵⁵ with a central opening through which the chariot can be rolled—a sort of roof-level eccyclema.⁵⁶ Given the conjectured shallow depth of the skene building and its roof (around 15 feet [or 4.6 meters] according to Pickard-Cambridge, under 10 feet [or 3 meters] according to Newiger), however, there would be just barely enough room for such a contraption. Nevertheless, a cooperative theater-audience will accept by convention even a clumsy inscenation, supplementing with its own imagination whatever physical and verbal clues are provided. I cannot assert, therefore, that these alternatives are impossible, but I regard the staging with the crane as more effective and more likely: it makes simple use of a device that could also be employed in other contexts, whereas the alternatives seem to require *ad hoc* constructions or at least modifications of what would normally have been on the roof. Just as in the case of Orestes in the finale of his play, Medea is performing a godlike stopping action (as Jason with his attendants tries to force open the doors). Actual arrival though the air would, in my opinion, have had the most dramatic and meaningful effect: it reinforces the presumably exotic visual clues provided by the prop chariot in demonstrating the complicity of divinity in her revenge and the inhuman status she has taken upon herself through her revenge.

It is a commonplace that the *Prometheus* presents unprecedented (to us, at any rate) challenges in the mechanics of its production. The notion that the main action of the play took place on the roof has little to support it in the text and, as with similar proposals for other plays, raises serious difficulties and need not be treated in detail here.⁵⁷ For those who assume as I do a more or less normal [267]inscenation at the stage level, the staging of the parodos is perhaps the most unusual feature. I agree with Griffith⁵⁸ that the most economical explanation of the details of language and contact in this and the following Oceanus scene is that the chorus appears above stage level and must disappear

⁵⁴Again, one who believes in a two-story paraskenion could bring the chariot onto the central roof from a side door in the upper paraskenion. Pickard-Cambridge (*supra*, n. 2) 55 does not believe in a two-story paraskenion, but for some reason believes that Medea would best interact with Jason if she were over a paraskenion instead of in central position. He does not rule out, but does not endorse use of the crane, so it is unclear how he meant the appearance to be managed.

⁵⁵It is less likely that such a panel would have been placed at the rear of the skene, since this would require a large scaffold on which to hold the chariot before deployment.

⁵⁶Arnott (*supra*, n. 2) 81 appears to favor a wheeled chariot on tracks, and I assume that he intends a central position.

⁵⁷Cf. App. 1, items II.B.2 and II.A.1 with note.

⁵⁸Commentary (Cambridge, 1983) on *Prom.* 128–92.

temporarily to come around to the orchestra for the first stasimon. Whether the chorus numbered twelve or fifteen, it is incredible that there was in the modest theater of the fifth century (and probably even in the elaborate theaters of the Greco-Roman era) a crane strong enough to hoist this number of performers and their car(s) and plant them on the roof (or hold them suspended in the air for the duration of the scene in lines 114–283). The chorus members must then have walked onto or rolled onto the open portion of the roof. Two main alternatives exist. Simplest would be to enter from a ramp or ramps, either built against the back of the skene building parallel to the skene façade or on each side of the skene building (concealed by panels at stage level?). If the choreuts were in individual cars (which could have been no more than light-weight frames worn around the body of the walking choreuts),⁵⁹ the use of a normal ladder or staircase would have been impossible or very difficult, but a ramp would have been negotiable. With this staging, the roof can be open and bare, providing maximum space for whatever movements were choreographed for this parodos.⁶⁰ The other main possibility is to have the choreuts and cars in concealment at roof-level at the start of the play and emerge into sight for the parodos. Unless the available surface on the roof was actually much deeper than in the reconstructions of Pickard-Cambridge and Newiger, a panel placed in the center of the roof concealing behind it enough area to hold the chorus and cars would leave too little space in front for their appearance or movements. More convenient would be a panel to one side or panels at each side, leaving the central area of the roof open to its full depth as well as, perhaps, shallower space in front of the panel or panels. Again we are not in a position to make any definitive decision among the various possibilities; but a bare roof with ramps has advantages of simplicity of construction, spaciousness for movement above, and versatility for other productions [268]staged in the same festival. Moreover, if it is correct that the crane was used for Oceanus and my estimates of required clearance for the crane (App. 2) have any validity, the use of concealing panels at roof level is very doubtful. Even if we for some reason prefer to posit for *Prometheus* and *Medea* production with concealed areas on the roof, the needs of the two plays would

⁵⁹As has been recognized in the past, staging would be very much easier with individual cars or with several cars each holding a few choreuts than with one large vehicle; indeed the only reason to assume a single vehicle would be the desire to suspend it from the crane. The singulars ὄχῳι and θᾶκον in *Prom.* 135 and 280, occurring in sentences with singular verbs, need not, I think, be pressed, and πτερύγων θοαῖς ἀμίλλαις in 129–30 may imply multiple vehicles (cf. also οἰωνῶν in 125). Use of individual cars would also allow dancelike movements on the roof, and I do not believe in stationary choral singing, in Pindar’s epodes or tragedy. (For further discussions of the staging, see Pickard-Cambridge [*supra*, n. 2] 39–41, Taplin [*supra*, n. 1] 252–60, E. Fraenkel, “Der Einzug des Chors im Prometheus,” *ASNP* ser. 2, 23 (1954) 269–84 = *Kleine Beiträge* [Rome, 1964] 1.389–406.)

⁶⁰If we suppose, for instance, that there were 15 choreuts wearing “car-suits” measuring about 3’ wide by 4’ long [or 0.9 by 1.2 m], each moving and turning within a space of about 5’ by 5’ [or 1.5 by 1.5 m] when in tight formation, they would require a minimum of 375 square feet [or 34.8 m²] on a surface that one estimate puts at 600 square feet (15 x 40) [or 55.7 m²].

be best served by separate *ad hoc* constructions, and these plays do not require us to assume the routine use of concealing panels or other second-story features.

Having surveyed the possible additional structures at roof level, we may now summarize the features of the roof and its use that can be established, or at least proposed, from the passages collected in Appendix 1. Except in the extraordinary parodos of *Prometheus* the acting area on the roof seems normally to have accommodated one person (human: watchman in *Agamemnon*, wife in *Acharnians*; divine: e.g., Athena in *Ion*) or two (human: Strepsiades and Xanthias in *Clouds*; divine: e.g., Dioscuri in *Electra*) or three—or more—(Orestes, Hermione, and Pylades in *Orestes*, Lysistrata, Myrrhine, and at least one other woman in *Lysistrata*). The front edge may have been protected by a short parapet (cf. *Orestes* 1569–70, 1620), but this must have been low enough not to disturb the sightline of most of the audience toward a character lying on the roof (Bdelycleon in *Wasps*), and the front of the roof was also easily negotiable by an actor climbing a portable ladder from the stage below (Strepsiades in *Clouds*). A somewhat taller parapet may have been added *ad hoc* to represent the acropolis battlements in *Lysistrata*. Just below the front edge there may have been at times painted metopes (*IT* 113–14?) or other architectural features (*Wasps* 205–209).⁶¹ Apart from the peculiar props of the chorus in *Prometheus*, we have evidence for the following props used on the roof: perhaps a chimney top and certainly a chimney cover (*Wasps*); perhaps removable planks, allowing the roof-beams to be exposed (*Clouds*); Medea's chariot, with dummy corpses; Athena's chariot (*Ion*).

The foregoing list is based on passages that are generally accepted as involving use of the roof. Before turning to the more controversial instances, for which there is not wide agreement that the upper-level was used, it will be useful to survey what we know or suspect about the appearance or use of the crane, which I accept as one means of access to the roof-level acting area. Secure early references to the crane (as for the eccyclema) come from comedy, where the tragic device is laid bare and used for humor (see App. 1, VII). But just as the text of some tragic scenes allows us safely to infer use of the eccyclema, the words in passages like *Heracles* 815–873 and *Andromache* 1226–30 are such as to assure us that the crane was in use. As mentioned earlier, the Lyssa–Iris scene in [269]*Heracles* gives strong evidence of simultaneous use of two means of access to the roof. The chorus, just finishing a celebratory stasimon, suddenly reacts to a fearful vision above the palace (οἶον φάσμι' ὑπὲρ δόμων ὄρω, 817). Iris halts the chorus' incipient flight (θαρσεῖτε, 822). At the close of the dialogue of the two goddesses, Lyssa instructs Iris to go back to heaven, “raising aloft” (πεδαίρουσ', 872) her foot, and says that she herself will go down into (δυσόμεσθ', 873) the house. The spoken words will be

⁶¹Whatever the correct text in *IT* 113–14, I would assume that there was no real opening in the skene façade for Orestes and Pylades to climb through (*contra*, Pickard-Cambridge [*supra*, n. 2: 53 and n. 1], who would have the Phygian in *Orestes* emerge through a metope opening: cf. now West, cited in App. 1 n. 8). In *Wasps* 202–10 there need not be any real opening under the tile for the comic business (see MacDowell).

confusing and the visual clues of the goddesses' movements will be nonsensical unless the crane is used. It will not do to have both goddesses climb a stair or ladder from behind, then have Iris depart by the same stair and Lyssa through a trapdoor. Nor can the goddesses alight at stage level to permit Lyssa to go in through the central door: *δυσόμεσθ'* is more than *ἔσιμεν*. They must appear together on the crane, the crane must deposit them on the roof, and Lyssa must depart downwards (by external stair or by trapdoor) while Iris is raised aloft once more and swung away before disappearing. Another clear case⁶² of flight is provided by the anapaestic announcement in *Andr.* 1226–30 *ἰὼ ἰὼ / τί κекίνηται, τίνος αἰσθάνομαι / θείου; κούραι, λεύσσειτ' ἀθρήσατε / δαίμων ὄδε τις λευκὴν αἰθέρα / πορθμευόμενος τῶν ἵπποβότων / Φθίας πεδίω ἐπιβαίνει*.⁶³ These two plays also show that it was usual for the suspended actor to be deposited to stand on the roof: Lyssa exits downwards, and the word *ἐπιβαίνει* in *Andr.* 1230 may refer to alighting.⁶⁴ Although the parodies in comedy show that a suspended actor can deliver lines (and I have favored above a staging that leaves Apollo suspended in *Orestes*), it would obviously have been less precarious both for the actor and for the operators of the crane to deposit the actor on a firm surface for delivery of his lines.

The existence of the crane in the late fifth-century theater is thus not to be doubted. But our information is insufficient to fix a useful *terminus ante quem*. The earliest fixed date for a widely-accepted use of the crane is *Medea* in 431, but the effects that I (and others) have detected in the use of the crane in the finale [270] of *Medea* presuppose an established convention, which implies that the use of the crane for divine appearances was not a recent innovation in 431.⁶⁵ I believe that the crane was used for Oceanus in *Prometheus*, but this pushes its use back at least to the 450s only if Aeschylus is accepted as the author, so this instance is too controversial to be helpful. Nor can

⁶²It is curious that the use of the crane is (relatively) so well established for this play, even though we cannot be sure if it was ever performed in Theater of Dionysus: in antiquity research in the archives (ultimately Aristotle's) did not reveal a production of this title under Euripides' own name at the Dionysia (or Lenaia). Cf. Σ *Andr.* 445, Callimachus fr. 451 Pfeiffer, and P. T. Stevens, *Euripides: Andromache* (Oxford, 1971) 19–20.

⁶³Cf. also Eur. *El.* 1233–35, *ἀλλ' οἶδε δόμων ὑπερ ἀκροτάτων / βαίνουσί τινες δαίμονες ἢ θεῶν / τῶν οὐρανίων· οὐ γὰρ θνητῶν γ' / ἦδε κέλευθος. τί ποτ' ἐς φανεράν / ὄψιν βαίνουσι βροτοῖσιν;* (cf. 1349 *διὰ δ' αἰθερίας στείχοντε πλακὸς*); *Rhesus* 886–9, *τίς ὑπὲρ κεφαλῆς θεός, ὦ βασιλεῦ, / τὸν νεόκμητον νεκρὸν ἐν χειροῖν / φοράδην πέμπει; / ταρβῶ, λεύσσω τόδε, πῆμα:* higher position is explicitly attested and the action *νεκρὸν ... φοράδην πέμπει* surely requires the crane.

⁶⁴*ἐπιβαίνω* in the sense “alight upon (after flight)” here governs the gen., just as in phrases describing alighting from a ship or a chariot (*Od.* 4.521; *IT* 215; the acc. in *Il.* 14.226 and *Od.* 5.50 means “fly over, across,” not “alight upon” [*pace* LSJ]). I assume that *ἵπποβότων Φθίας πεδίω* is a general periphrasis (“the land of Phthia”) and not literal, “on the ground,” i.e. on stage level with the humans, as contemplated by Pickard-Cambridge [*supra*, n. 2] 56.

⁶⁵Contrast the view of Bethe (*supra*, n. 50: 130ff.), who argued that the crane was an innovation of the 420s; cf. *supra*, n. 5.

Pollux's evidence be considered reliable enough to certify the use of the crane in lost Aeschylean plays (see App. 1, III.B.4, V.A.1).

Without more detailed review of other probable instances of use of the crane, a list of features related to the crane may now be compiled (cf. App. 1 for details). The crane can carry one person or two (Lyssa and Iris in *Heracles*, Dioscuri in *Electra* and *Helen*, Apollo and Helen in *Orestes*). The actor may often have worn a simple harness or stood on a sort of simple trapeze. A trapeze would have been much more practical when two persons were carried on the crane, and on one occasion at least (Lyssa in *Heracles*) it must have been very easy to step off the trapeze (or undo a harness?).⁶⁶ But the actor sometimes rode in or on a more substantial prop suspended from the crane, such as a chariot (Medea, Athena in *Ion*),⁶⁷ a prop horse (Bellerophon), a prop beetle (Trygaeus), a prop griffin (Oceanus), a basket or wicker mat (Socrates). In *Rhesus* the Muse on the crane carries the dummy corpse of Rhesus. Actors on the crane can remain suspended in the air for some time (Trygaeus, Perseus in the opening scene of *Andromeda*[?], Apollo and Helen in *Orestes*[?], Iris in *Birds*), can alight on the roof but not dismount (the most common case), can alight on the stage and not dismount (presumably Oceanus), or can alight on the stage and dismount (Socrates, Trygaeus). (If we put faith in Pollux, then perhaps an actor could also alight on the stage and pick up (receive from attendants) a dummy corpse to carry away: Eos with the corpse of Memnon in [?] Aeschylus's *Memnon* or *Psychostasia*, according to Pollux; cf. *Rhesus*.)

Specifying how extensively the crane was actually used is more controversial. Many who concede the existence of the crane are nevertheless reluctant to posit its use in particular cases. I think it can be shown that several of the grounds that appear to motivate this prejudice against the crane are much weaker than has been acknowledged in the past. (1) Scholars seem to be embarrassed by what [271]they regard as the absurdity and clumsiness of the device and to worry whether an entrance on the crane might reduce the dignity of tragedy.⁶⁸ But within the conventional world of the tragic performance, the

⁶⁶Another possibility is that Iris and Lyssa are together in a chariot, but I think it much more likely that the phrase βέβακεν ἐν δίφροισιν κτλ. in *Her.* 880f. is purely metaphorical. Of those who believe in a visible chariot, Hourmouziades (*supra*, n. 2) 162 draws the odd conclusion that Lyssa departs with the chariot and Iris departs otherwise, and Pickard-Cambridge (*supra*, n. 2) 55, assuming use of either the roof of the second story or a special raised platform, thinks the chariot was concealed behind a gable or parapet, but gives no clear idea of how the chariot comes into view and where Lyssa disappears.

⁶⁷A reader points out that with the actor on a trapeze, a flat painted panel representing a chariot might have sufficed for a case such as Athena in *Ion*.

⁶⁸Cf. Pickard-Cambridge (*supra*, n. 2) 51 (Sophocles more sensitive to "improbability and absurdity" of device), 111 ("improbability" and "incongruity"), 127 ("absurdity of intended illusion"); Wilamowitz (*infra*, n. 76) 2.148–9 (theologeion invented to replace the earlier, clumsy crane); Hourmouziades (*supra*, n. 2) 154 ("unlikely that Perseus remained awkwardly suspended"). This concern for the "absurdity" of the device is related to the "classicizing" insistence that Sophocles never indulged in such a device. But we in fact have inadequate information about most of Sophocles' plays. If his *Peleus* (App. 1, V.B.2) actually featured Thetis in a stopping action, it seems probable to me that she made a sudden intervention on high,

audience will have known and accepted the convention and not have been struck by any such sense of awkwardness or absurdity, even though the same audience could enjoy a laugh at the convention in the context of comic parody.⁶⁹ (2) Some scholars think that the crane was necessarily slow,⁷⁰ but this need not have been so. Although a fixed-beam crane on a pivoting upright requires a winch for vertical movement, which would necessarily be rather slow and perhaps noisy, a pivoting counterweighted beam would be capable of much more rapid movements and make a different kind of, and perhaps less, noise. A crane of a certain form, therefore, is compatible with the need for rapidity and surprise (see App. 2). (3) A few have argued that an announcement is needed whenever the crane is used to cover the time (and noise?) required for movement of the actor on the crane from behind the skene into a position of rest from which he can readily speak. Unless an anapaestic announcement is present or anapaests are chanted during the scene of flight, such scholars decline to posit use of the crane.⁷¹ Although it is reasonable to regard some anapaests as (in part) performing a covering function (e.g., *Andr.* 1226–30, *El.* 1233–37; note that Trygaeus is perhaps in motion during the anapaests, *Peace* 82–101, 149–72, but at rest during the non-anapaestic parts in the middle of the scene, 102–48), there is no automatic correlation between presence or absence of announcement and use or nonuse of the crane. Rather the absence of announcement is related to the playwright's desire to create a sharp stopping effect by the intervention of a divinity in an action in which the [272]human characters are, sometimes passionately, absorbed. When a god enters and urgently initiates contact, there is appropriately no announcement.⁷² Likewise, in *Medea*, where (as argued above) the crane is the best solution for staging, there is no announcement, and Medea initiates contact with a stopping speech. Announcement of a *deus* figure is normal only when there is no need to prevent irreparable harm from being done.⁷³ In the finale of *Ion*, for instance, where I believe the crane to have been used, Euripides gives an iambic announcement of Athena's epiphany

like other saving gods: Pearson *The Fragments of Sophocles* (Cambridge, 1917) 2.142, however, does not address the issue directly and summarizes the possible actions as “[Acastus] was met at the entrance [to the cave] by Thetis, who had arrived to visit Peleus.” Both Pickard-Cambridge (*supra*, n. 2: 50 n. 2) and Arnott (*supra*, n. 2: 74) refer to this summary to support the view that the crane was not used in *Peleus*. As for Heracles in *Phil.*, Seale (after Campbell) assumes that he reaches the roof via stairs, but the crane is perfectly possible, and we should not consider it less likely simply because of some prejudice about the dignity of Sophocles' dramaturgy.

⁶⁹Compare the comments of Malcolm Heath, *The Poetics of Greek Tragedy* (London 1987) 114 with n. 41, 178 n. 23, on some scholars' reluctance to accept the eccyclema.

⁷⁰For explicit reference to slowness, see Hourmouziades (*supra*, n. 2) 167 (“somewhat formal slow procedure”): see further *infra*, pp. 279–80 and n. 101.

⁷¹So Jebb on *Phil.* 1409, endorsed by Arnott (*supra*, n. 2) 73; Hourmouziades (*supra*, n. 2) 166 recognizes the weakness of this argument, but like most other critics is still inclined to say that there is no reason to assume the crane when no hint of movement is given in the text.

⁷²Cf. App. 1, items I.B.3, 7, 12, 14, 17, 19, 20, III.B.2.

⁷³Cf. App. 1, items I.B.6, 8, 9, 13, 18.

to Ion. In so doing, he has chosen to treat Ion's threatened embarrassment of his father differently from the rantings of Orestes or Thoas or Theoclymenus. The morally shaken, but still essentially pious young man is given the role of perceiving the goddess' arrival on his own and is given a reacting comment (1551–52) that, with its respect for *καῖρός* and the privileges of deity, recalls his earlier attitude (363–80) and prepares for his ready acceptance of Athena's assurances. Thus the presence or absence of an announcement is not a mechanical and conventional index of the use or nonuse of the crane, but a reflection of the playwright's dramatic purposes. The entrances are announced in *Her*, *Andr.*, and *El.* not because a convention requires it or because the crane is in use, but because the poet wants to portray the panic and surprise of his characters and chorus more than he wants to portray abruptness and a surprise of a different sort. (4) Finally, some scholars wish to minimize use of the crane because of the supposed discomfort⁷⁴ for the suspended actor. This depends, however, on the style of harness and can be reduced by use of a trapeze (presumably a necessity when two persons appear) or other prop or by alighting; and any discomfort is, after all, part of the job, something demanded by the producer/director (who considers other things more important than the actor's comfort),⁷⁵ and perhaps not much more annoying than sometimes wearing head-masks and robes for hours in the hot sun.

Having established some features of the roof and crane and clarified my position in regard to several controversies, I now turn to the controversies surrounding the location and manner of divine appearances in classical tragedy. I wish to argue for the advantages (1) of the upper level for divine appearances in a number of scenes where the position of the god is widely disputed and (2) of the crane for many upper-level epiphanies. We must begin by considering whether certain divine appearances took place on high at all.⁷⁶ There is a ten-[273]dency in much of the scholarship on the staging of the Classical plays to believe in the least complicated arrangements that can be accommodated to the texts and to other contemporary evidence. In general I share this bias, but I think scepticism and the yearning for simplicity have been carried too far in regard to the location of divine appearances. Two general considerations suggest to me that appearance of divinities on the roof is, in tragedy, in most cases preferable to appearance at stage level: (1) the higher position gives strong visual marking to the distinction between the human and the divine, a distinction that is at the very basis of

⁷⁴Arnott (*supra*, n. 2) 73

⁷⁵Mark Griffith reminds me of the ordeals imposed on some singers by composers of opera (e.g., Brunhilde in Wagner's *Siegfried*).

⁷⁶See Barrett on *Hipp.* 1283 for a concise statement of the problem and an agnostic attitude with regard to prologue gods and a fairly sceptical approach to the use of the crane for epilogue gods. Some of the basic earlier discussions are Wilamowitz, *Euripides: Herakles*, 2nd ed. (1895; repr. Darmstadt, 1959) 2.148–49; Müller (*supra*, n. 2) 151–53; Bethe (*supra*, n. 2) 130–41; Navarre (*supra*, n. 2) 136 n. 3; Bodensteiner (*supra*, n. 2) 666–71; Hourmouziades (*supra*, n. 2) 146–69.

tragic drama and of the archaic thought out of which it grew;⁷⁷ (2) the suddenness and invisibility of entrance and exit on high convey clearly the distinction between human and divine locomotion—another telltale feature in Greek myth and poetry that marks the ease and difference of divine existence.⁷⁸ The first point is more important in epilogues than in divine prologues, but the second has some force even in prologues, and it applies not only to how the divine characters appear but also to how they disappear from the audience's view.

There are of course prologue gods who definitely appear on stage, but I would argue that these cases should not be taken, as they often are, as decisively determining a convention for prologue gods. Apollo's withdrawal from the house at the approach of Alcestis's death (*Alc.* 22–23) marks his special relationship with Admetus's house and allows him to confront Thanatos at the door. Presumably Thanatos walks in by an *eisodos* and Apollo departs by an *eisodos*, but this visual demonstration of gods walking the streets of Admetus's kingdom would contribute to the fairy-tale atmosphere of the play, which is rather different from that of a standard tragedy. Dionysus walks the streets of Thebes at the opening of *Bacchae* and in his confrontations with Pentheus in later scenes of the play, but he is then a god disguised in human form. At the end of the play, he arrives by divine means (the arrival is of course lost in the lacuna before line 1330) and takes a higher position separate from the human characters, so that both his manner of arrival and his position serve to underline the full revelation of his identity, to provide the final confirmation of his divine status, and to accentuate the gulf in feelings that separates the human survivors Cadmus and Agave from their divine relative. In the prologue of *Ion* Hermes presents himself as a humble subordinate to Apollo in the past and a spectator of the day's events. We cannot say whether he made a “canceled” entry from the side or came from [274]the temple, but at the end of the scene he steps aside to eavesdrop and observe.⁷⁹ If he walks down an *eisodos*, his departure will be slow and humanlike and would seem visually to contradict his being a spectator. I think it likely that he withdraws rather quickly through one of the secondary doors (presumably disguised behind a panel

⁷⁷The very point of most divine appearances is the superiority of the knowledge or power of the gods: they know what the human characters themselves cannot know; they can stop human actions if they wish; they can manage events when the humans are unaware that events are being managed.

⁷⁸Cf., e.g., for speed and motion through the air, *Il.* 1.194–98, ἦλθε ... οὐρανόθεν; 2.17, καρπαλίμως; 4.74, κατ' Οὐλύμποιο καρήνων ἀΐξασα; 14.282, ῥίμφα πρήσσοντε κέλευθον; 14.292, κραιπνῶς; 24.346, αἶψα; *Od.* 1.96–98, ἅμα πνοιῆς ἀνέμοιο; 1.319–20, 3.371–72, etc.; *HH Dem.* 317, μεσσηγὺν διέδραμεν ὦκα πόδεσσιν, *HH Ap.* 277–81, *HH Aphr.* 66–67; Sappho 1.11–13, ἀπ' ὠράνωϊθερος διὰ μέσσω· αἶψα δ' ἐξίκοντο.

⁷⁹In a somewhat confusing discussion Hourmouziades (*supra*, n. 2) 157 argues that Hermes does not withdraw to eavesdrop, but goes into the temple to learn the outcome from the oracle: this leads him to the conclusion (contrary to his general inclination) that Hermes is on the roof.

with painted foliage), which were commonly in use in comedy but rarely employed in tragedy.⁸⁰

The examples of *Alcestis* and *Ion* are suggestive of a generic difference between tragic gods and those who appear in satyr play and comedy. The separation of gods and men is a tragic theme, and is normally expressed visually in tragedy⁸¹ by their not appearing together or by their occupying distinct spaces when they do share the stage. In satyr play, on the other hand, there is an easy sharing of the stage by mortal heroes, nymphs, satyrs, and gods, a feature that is perhaps alluded to in *Alcestis* in Apollo's emergence from a human being's palace and the entrance of Thanatos (a folkloric rather than Olympian deity) into it. The unthreatening, nontragic familiarity of Hermes' speech to the audience in *Ion*, moreover, points forward to the tone and attitude and (apparently) the position of prologue-gods in Menander.⁸²

Other gods who appear at stage level (and are not confined to the prologue) include the gods of *Eumenides*, which is extraordinary (among extant plays) in having humans and undisguised divinities sharing the stage throughout the play,⁸³ and those of the *Prometheus* plays (where Io and Heracles are the exceptional human interlopers in divine dramas). Finally, in *Rhesus* (which I take to be a fourth-century play) it is uncertain to me whether Athena shares the stage with human characters in the middle of the play or appears above them. The scene is similar to the prologue of *Ajax* and (less so) to the epilogue of *Hippolytus*. Odysseus recognizes Athena by her voice (608–609), just as he does in *Ajax*; [275]similar is Hippolytus' recognition of Artemis by her fragrance (*Hipp.* 1391–93). In *Hippolytus* it is obvious from the suddenness of her arrival and from her hasty departure at lines 1440ff. that Artemis appears on high,⁸⁴ and Athena in *Ajax* is also, I think, best positioned on high (discussed below). In the nighttime scene of *Ajax*

⁸⁰The clearest cases in tragedy of use of a secondary door seem to me to be *Ajax* (Eurysaces brought on from another tent, not by the eisodos: but the eisodos is advocated by Heath [*supra*, n. 69] 183 n. 32) and Hermes here in *Ion*; more problematic is the central scene of *Choephoroi* (on which see A. F. Garvie, *Aeschylus: Choephoroi* [Oxford, 1986] xlvii–lii, with references to other discussions). The cases examined by Hourmouziades (*supra*, n. 2) 21–25 (*IA* 855ff., *Phaethon* prologue, *Hel.* 1165ff., *Hec.* and *Tro.*) do not stand up to examination. Pickard-Cambridge (*supra*, n. 2) 52 incorrectly posits use of a side door or paraskenion door in *Alc.* 543–46; Arnott (*supra*, n. 2) 42 falsely posits one for *Cyclops*. I agree with those who believe that the “double-doored” cave of *Phil.* has only a single opening (central door) visible to the audience.

⁸¹It may be necessary to add the qualification “after Aeschylus,” as is often done: see n. 83. On Sophocles, see the discussion of *Ajax* below and *supra*, n. 68.

⁸²See App. 1, IV.9 with note.

⁸³We cannot be sure how often Aeschylus did this sort of thing; our information on, e.g., *Psychostasia* and *Niobe* is inadequate, and we do not know where Aphrodite appeared in *Danaides*, or whether her role was confined to the exodos (as with later epilogue divinities). In one type of play a god may regularly have appeared outside the prologue and epilogue: the theomachos play, such as the Dionysus plays of Aeschylus or Sophocles' *Thamyras*.

⁸⁴This has not been, however, universally accepted: cf. Bodensteiner (*supra*, n. 2) 670–71, Müller (*supra*, n. 2) 151–53, Bethe (*supra*, n. 2) 130; Wilamowitz (*supra*, n. 76) 2.149.

there is also emphasis on Odysseus' inability to see the goddess (*ἄποπτος*, *Ajax* 15; but Ajax, in his altered mental state, seems to be able to see her: I would interpret Odysseus' contrasting inability as a mark, within the context and thematics of this scene, of normal mortal status and not as due simply to the darkness).⁸⁵ In the imagined darkness of *Rhesus* Athena will have been immediately recognizable to the audience by her costume, but she does not identify herself in 595–607 when she addresses the two Greeks, and Odysseus' use of her voice for identification would seem to imply that he cannot see her, though in this case the failure may be due to the imagined darkness. In the exchange with Alexandros, Athena immediately identifies herself as Cypris, but nothing is implied about her visibility to him. Without verbal clues, the audience would have to be guided by the positions and orientation of the actors as the lines are spoken. The few details that might suggest that in *Rhesus* the goddess is at stage level are not quite conclusive. When she sees Alexandros on the eisodos, she says that he is approaching *καθ' ἡμᾶς* ("toward us, in our tracks," 627). She also says that she will pretend to be standing by him as protector (*δοκοῦσ' ἄρωγὸς ἐν πόνοις παραστατεῖν*, 638), but the phrase could be metaphorical rather than a literal stage direction. Finally, she makes clear to the audience that though Alexandros is now close to her, he has not heard any of the preceding dialogue (641); but this could apply just as well if she were above and he were reaching the position where Odysseus and Diomedes had been standing. If Athena is at stage level, her entrance (and disappearance at 674) would best have been managed not through an eisodos, but through an auxiliary door concealed behind painted shrubbery, as in the prologue of *Ion*. Her movements would thus be clearly distinct, even on stage level, from the cautious eisodos entrance of the two Greeks and the slow progress along the eisodos made by Alexandros.

In several other plays the position of the prologue-god is disputed, or stage-level appearance is commonly accepted as the norm.⁸⁶ In *Hippolytus* the entrance of Aphrodite may be a "canceled" one, in which case it does not matter how she emerges. If she emerges from the palace-door, one might view this as symbolic of her power over Phaedra, who is mistress of this house. But the [276]goddess herself makes no reference to such an immediate visitation, and indeed what she does say implies that she has been acting from afar and for a long period of time. More important is the question where, if she is at stage level, Aphrodite departs at the approach of Hippolytus and his men, which she announces. She cannot go into the palace, symbolically reasserting her sway over Phaedra, for she says *ἔξω τῶνδε βήσομαι τόπων* (53), and I believe it would be intolerably slow and inexpressive of the ease and speed of divine action to have her walk

⁸⁵It is not made explicit whether Hippolytus can see Artemis, whom he has not been permitted to see before (cf. 85–86, *σοὶ καὶ ξύνειμι καὶ λόγοις ἀμείβομαι*, / *κλύων μὲν αὐδῆς, ὄμμα δ' οὐχ ὀρώων τὸ σόν*).

⁸⁶In favor of the lower level for all prologue gods are, e.g., Bodensteiner (*supra*, n. 2) 671, Müller (*supra*, n. 2) 151–53; Navarre (*supra*, n. 2) 136 n. 3; Heath (*supra*, n. 69) 165–66.

off by the eisodos opposite to the one used by Hippolytus.⁸⁷ One could of course posit use of a concealed secondary door (as I have done above for *Ion*, and for *Rhesus* if the roof is not used). But the parallelism with Artemis (marked structurally by the hymns 58–71 and 1268–81, scenically by the presence of the two statues before the palace, and thematically in many other ways) would receive important visual reinforcement if Aphrodite, like Artemis at the end, appears on high. Her coming and going thus acquire a suitable ease and superiority to human movement, and in a play in which the distinction between the status and privileges of divinity and those of human beings is a major issue the visual reinforcement of separation would be welcome.

In *Hecuba* the ghost of Polydorus—who in knowledge and mobility and dramatic function is on a par with prologue gods—would also be staged more convincingly, in my opinion, with the actor appearing on the roof of the skene. It is generally believed that the ghost appears on stage level, on the ground that he has just come from the underworld (ἤκω νεκρῶν κευθμῶνα καὶ σκότου πύλας λιπών, 1–2);⁸⁸ but such a phrase may just as well impart a remote as an immediate point of departure, and Polydorus goes on to tell the audience that while his body is rolling in the surf he, as a spirit, hovers over his mother for the third day now (ὑπὲρ μητρὸς ... αἰσσω, 31, αἰωρούμενος, 32), terrifying her with dream visions as she sleeps within the tent (54, cf. 69–72). I think these words may, and should, be taken as verbal clues to the staging (though they could be spoken by an actor who simply stands right outside the tent: cf. dream figures who stand at the dreamer's head, as in *Il.* 2.20, 23.68, *Od.* 4.803, etc.). When Polydorus perceives that his mother is about to come out,⁸⁹ he announces that he will get out of the way (ἐκποδῶν χωρήσομαι, 52), but presumably does not actually move away from his position until he has completed his pathetic apostrophe to his mother (55–58). Hecabe emerges at 59, after an indeterminable pause, but presumably not a lengthy one, since she has been announced in 53. Again, it will be less effective, it seems to me, for the ghost to walk off by an [277]eisodos. Quick departure will be very easy on high.⁹⁰ If staging on high is

⁸⁷βαίνω in tragedy is a generic verb of motion (e.g., *El.* 1234, 1237, of the flying Dioscuri; *Tro.* 888 of Zeus's mysterious silent motions; *Tro.* 128, *IT* 1109, of travel by sea), so the use of βήσομαι in *Hipp.* 53 gives us no assurance that Aphrodite is “walking” on the stage (the same applies at *Tro.* 57).

⁸⁸Cf., e.g., Heath (*supra*, n. 69) 165.

⁸⁹Being a spirit he may know this without being at stage level and actually looking in at the door. Cf. Lyssa observing Heracles indoors (*Her.* 867ff.).

⁹⁰If the ghost is on stage level, then departure through a concealed secondary door would, in my view, be preferable to walking down the eisodos. Of the other ghosts in extant tragedy, Darius in *Persae* either used a route beneath the stage level (later known as “Charonian steps”) or the tomb from which he rises was built very close to the back wall of the stage, near a concealed door, so that an actor could creep behind it unseen and then rise from behind (or within?) it (cf. Simon [*supra*, n. 2] plate 2 for a vase-painting with ghost at tomb). (If one does not believe there was a scenic background in 472, the tomb could be close to the retaining wall opposite the orchestra, and the actor could climb up from below. Taplin, *Stagecraft* [*supra*, n. 1] 117 n. 1, refers to scholars who would place Darius on the roof of the skene.) For the ghost of Clytaemestra in *Eumenides* cf. App. 1, I.C.1; and Taplin, *Stagecraft* 365–67. The heavy

accepted, it is to be noted that the roof simply represents a higher plane inappropriate to human characters, not the physical roof of what in this play would be a tent.⁹¹

In the prologue of *Troades* those who are sceptical of the use of the roof by prologue divinities would place Poseidon and Athena at stage level.⁹² There are, however, considerable difficulties of entrance and exit with such a staging, and these are compounded by the fact that the gods will thus share the stage with a human figure (the prostrate Hecuba) and that Athena arrives so quickly and is explicitly told to depart to the sky (*Ὀλυμπον*, 92). It is at least awkward to have Poseidon stand on the same level as Hecuba but not refer to her until line 36 and not offer any explanation of her lack of awareness of his presence.⁹³ Poseidon's entrance may be considered "canceled." But where does he exit? If he is on stage level, I again question the propriety of a staging in which the god of the sea ambles down the *eisodos* to reenter his realm at the seashore.⁹⁴ One might again posit a concealed secondary door suitable for a rapid divine disappearance, but Euripides makes a point of having Athena directed to a different exit, "to Olympus." Neither an *eisodos* nor the same concealed door used by Poseidon will be [278]visually convincing for her movement. Another concealed door could be posited, but it is slightly confusing to have the two gods disappear at the same level for such different destinations. If one insists on stage-level inscenation, use of the crane for Athena would be much more effective, and exactly suited to the stopping function of her intervention (Poseidon has just said farewell as if about to depart). But once one concedes use of the crane, why not simply employ the upper level? Visual and dramatic clarity are far superior if Poseidon appears on the roof (by the ladder or stairs), Athena joins him

emphasis on her being visible to the Furies (at least some of whom I assume to be visible during this scene) in their dreams would fit well with an appearance on high, where she would, like Polydorus, hover over the sleeping figures. Is this not easier and more effective than the alternatives?

⁹¹My main purpose here is to argue for Polydorus' higher position; but, as a reader reminds me, the verbal clues would fit use of the crane. Arrival and departure on the crane would be very effective in this scene.

⁹²Cf. Hourmouziades (*supra*, n. 2: 161), who recognizes the difficulties of a stage-level appearance, but rejects use of the roof because he strangely assumes that if the gods are on high they must both separately use the crane or both separately and confusingly use the same trapdoor or opening in a "superstructure."

⁹³Contrast the prologue of *Ajax*: Odysseus' inability to see Athena is made clear in his first lines, and I believe that it is made clear to the audience even before that by the distinction in level (see below). In support of placing Poseidon on stage level, Heath (*supra*, n. 69) 165 notes "Poseidon's deictics [32–33, *στέγαις ταῖσδ'*; 36, *τήνδ'* (*Ἐκάβην*)] imply proximity to Hecuba"; true, but they do not imply proximity at stage level as opposed to the proximity the actor has if at roof level.

⁹⁴I grant that, as a reader objects, a skillful actor playing a god could walk impressively down the *eisodos*. The point of my argument, however, is that if the resources of the theater provided an easy alternative (whether secondary door or use of roof) to such an inscenation, the playwrights would have preferred it because it was more representative of divinity (just as they invented and used the crane because this seemed to them a better representation of flight than having the actor stand on the stage, or on the roof, flapping his arms suggestively).

and departs from him by flying (on the crane), and Poseidon disappears as easily as he appears (down the ladder or stairs). As in the case of *Hecuba*, the fact that the central door is decorated as a tent or hut rather than a temple or palace does not, I would suggest, prevent the playwright from using the upper level as the divine plane.⁹⁵

In the prologue of Sophocles' *Ajax* a goddess interacts with two human characters. The alternatives for staging have been well presented by others,⁹⁶ and the comparable scene in *Rhesus* has been discussed above. As would be expected from my arguments about other passages, I see no problem in having Athena appear on high. There is nothing clumsy about dialogue between actors on different levels,⁹⁷ and the visual distinction of divine and human status would be very important in a scene that plays so terribly on the theme of the limitations of human existence. If Athena is above, her entrance and exit are easily managed. At stage level, one would need, in my view, another concealed door (unless we are to see Athena walking along an eisodos just like Odysseus): in this play that would be the third opening in the background, if it is correct to assume the use of the eccyclema (at the central opening) both in Ajax's first appearance before the chorus and in the suicide scene and a separate tent from which Eurysaces can be brought on quickly at 541–44.⁹⁸

The gods appearing in divine epilogues, by almost universal agreement, distinguish themselves from the mortals they confront by standing on a different level. The gods' manner of appearance must usually have been rapid and impressive: in some cases the human characters themselves express surprise and awe; in [279]others, as we have seen, the humans are too absorbed in their own actions and their attention is directed to the *deus* only by the god's initiation of dialogue-contact (with a stopping utterance). Even in the latter cases, it is important to the effect on the audience that they not see the god approaching too much in advance. Visually such an effect could best be produced either by having the actor rise into sight on the crane or by having him appear on the roof without undue preliminary exposure to the audience. For instance, there could have been

⁹⁵This would apply also to *Rhesus* if Athena is on high and if the Muse alights on high rather than staying suspended. Similarly, with a cave decoration of the central door, Heracles appears above the level of human action in *Philoctetes*, and in *Birds* if Iris does not stay suspended (see App. 1, III.B.3), she would perhaps alight over the cave.

⁹⁶See Seale (*supra*, n. 2) 176 n. 3; Barrett on *Hipp.* 1283.

⁹⁷As alleged by Jebb, endorsed by Pickard-Cambridge (*supra*, n. 2) 48 (cf. 40 for a similar argument on *Prom.*): when one considers the finales of *Medea* and *Orestes* and epilogue gods in Euripides, it becomes obvious that this objection is misconceived.

⁹⁸After writing the above, I read Heath (*supra*, n. 69) 165–68, arguing for stage-level appearance of Athena (entering by the same eisodos as Odysseus? ["Athene follows Odysseus onto the stage"]; departing by the opposite eisodos to Odysseus) and attacking the arguments of W. M. Calder, "The entrance of Athene in *Ajax*," *CPh* 60 (1965) 114–16, some of which are similar to my own. Heath objects, among other things, (1) that prologue-deities regularly appear in the orchestra (but this is the point I am disputing); (2) that there is a parallel for the goddess walking off at the end of the prologue in *Tro.* (an instance that I have just disputed).

a small panel hiding the top of the external staircase (described above as type C);⁹⁹ or there could have been enough of a parapet at the front of the roof to allow an actor emerging from a trapdoor close to it to stay hunched and more or less out of sight until the proper moment. In view of other indications that there were no concealing panels and that the parapet was (sometimes, at least) not large, I regard the crane as the most convenient and likely device for effecting a sudden divine appearance. There is, of course, no more certainty here than for other problems. An opponent of the crane could argue, for instance, that there would be sufficient rapidity and surprise if the *deus* actor simply waited for his cue just below the top of the ladder at the back of the skene, or even that it may have been conventional for the actor to hunch at the back of the roof, just off the stairs, pulling his robe over his head, ready to stand up and unfurl the robe at the moment of epiphany. We cannot decisively eliminate these alternatives; but I would argue that at least the latter proposed technique dilutes the potential dramatic effect of an intervention by signaling to the audience too early and by distracting from the action on stage.

In the case of divine epilogues, then, the debate concerns which gods arrive by crane and which by stair or ladder. Although many critics have preferred to accept the use of the crane only where it seems to them unavoidable, I tried to show above the weakness of several grounds of this preference. Moreover, it is clear that for Plato (b. 428/7) and fourth-century authors the intervening god of the tragic epilogue was firmly associated with the crane (see App. 1, VII). I now want to consider the correlation between verbal clues in the text and possible uses of the crane, since some scholars accept the crane when verbal clues are clear (as in *Heracles* and *Andromache*) but reject it or pronounce *non liquet* when they are not. Ion's announcement of Athena at *Ion* 1549–52 refers to Athena's higher position, but not explicitly to flight, though the image of the rising sun carried in *ὑπερτελῆς ἀντῆλιον πρόσωπον ἐκφαίνει* may reflect the rising movement characteristic of the crane. In any case, *Ion* 1570 implies that Athena is in a chariot, which would be very hard to represent without the crane (cf. *Medea*). Explicit clues to the god's higher position¹⁰⁰ or to the means of entry are naturally absent when the [280]human characters are absorbed in their own actions and made cognizant of the god's presence only by the abrupt instruction of the god himself. The interventions at the end of *Iphigeneia in Tauris* and *Helen* are similar in essential details, and both plays have only the slightest clues to flight (in reference not to arrival but to the next destination of the gods). Yet the simultaneous appearance of a pair of gods like the Dioscuri in *Helen* is easier if actor and silent extra are on a trapeze hoisted on the crane than if both have to

⁹⁹Again, scholars who believe in a two-story paraskenion could have the god appear from the side of the upper level. Cf. *supra*, n. 37.

¹⁰⁰Higher position is implied in Hippolytus' distinction between hearing and seeing Artemis (cf. Barrett on *Hipp.* 1283). For *Or.* 1631–32 see App. 1, n.15. Heracles' words *οὐρανίας ἔδρας προλιπών* in *Phil.* 1414–15 could perhaps be taken as a very indirect hint of a higher position.

appear from a ladder (or even from a door or concealing panel). If the crane is accepted in *Helen*, then why not in *Iphigeneia* too?¹⁰¹ Finally, in a few cases the god explicitly mentions his or her next destination or intention to escort humans on a voyage or journey: *IT* 1488, συμπορεύσομαι δ' ἐγώ; *Ion* 1616, στείχεθ', ἔψομαι δ' ἐγώ; *Helen* 1665, πόντου περιπτεύοντε πέμψομεν πάτραν; *Orestes* 1683–5, ἐγὼ δ' ... / Ἑλένην Δίοις μελάθροισ πελάσω / λαμπρῶν ἄστρων πόλον ἔξανύσας. As in *Electra* 1347ff., *Heracles* 872, or *Troades* 92, such a reference may well be read as an internal stage direction motivating the departure of the god on the crane. Thus, in the case of *Ion*, Athena's final remark may be additional evidence that she is on the crane and indicate that she will accompany in flight the first stages of the procession of Ion and Creusa and chorus down the eisodos.¹⁰²

In closing, I wish to emphasize again that a study of this kind cannot claim to provide more than a reconstruction of possibilities and probabilities. But I think it is useful to visualize more carefully what different possibilities entail and to recognize that there may be more reason than recent students of the question have admitted to place most tragic gods on the upper level and to accept a wider use of the crane. Not only may visual effects derived from use of the roof and the crane have provided opportunities for dramatic surprise, variety, and dislocating effects of interruption (especially in stopping actions). They also may have supplied a significant reinforcement of the thematics of tragedy: the demarcation of a separate space, as well as a separate form of locomotion, commonly reserved for the gods creates at times a powerful visual token of the social, ethical, and psychological separation between mortal and divine.

University of California, Berkeley

APPENDIX 1: INVENTORY OF SCENES AND SELECT TESTIMONIA

Abbreviations: CR, crane; CL, clues; SP, special details; AN, announcement; ALT, possible alternative stagings; n.a., not applicable; anap., anapaests; ia., iambic trimeters. Fragments of Aeschylus and Sophocles are cited from Radt [281](*TrGF*), those of Euripides from Nauck² unless otherwise indicated. Cross-references to discussions in the article are given in square brackets.

I. SCENES FOR WHICH I ACCEPT (OR AT LEAST CONTEMPLATE) USE OF ROOF LEVEL

¹⁰¹Having ruled out the crane as too "slow" for *IT*, Hourmouziades (*supra*, n. 22) 167 is somewhat embarrassed to have to assume it for *Helen*, where two persons appear.

¹⁰²For practical considerations related to this staging, see App. Two.

NOTE: there are of course very few instances which are totally free of controversy, but I mark with an asterisk those where my view goes against that of several recent authorities, and I leave unmarked those for which there is at present wide agreement. Likewise, I mark “yes*” after CR (crane) if I advocate or contemplate use of the crane in opposition to the common opinion.

A. HUMAN CHARACTERS

1. *Aeschylus*, *Agamemnon* 1–39: *Watchman* CR, no; CL, φρουρᾶς, 2;¹ SP, φροίμιον χορεύσομαι, 31; AN, n.a.

2. *Euripides*, *Medea* 1317–1404 (or 1414?): *Medea* [pp. 264–66] CR, yes; CL, χειρὶ οὐ ψαύσεις ποτέ, 1320; ὄχημα ... Ἥλιος ... δίδωσιν, 1321–22; [νεκρούς παῖδας] φέρουσ’ ἐς Ἥρας τέμενος, 1379; SP, winged(-serpent?) chariot, with dummy corpses of two children (cf. later tradition: *hyp. Med.*, ἐπὶ ἄρματος δρακόντων πτερωτῶν; Σ 1317, ἄνω ἐπὶ ὕψους ἐστῶσα ταῦτα λέγει; 1320, ἀντὶ τοῦ οὐ δυνήσῃ κατασχεῖν ἡμᾶς οὐδὲ καταλαβεῖν. ἔχομεν γὰρ ὄχημα πρὸς ἀποφυγὴν τῶν πολεμίων. ἐπὶ ὕψους γὰρ παραφαίνεται ἡ Μήδεια, ὀχουμένη δρακοντίνοις ἄρμασι καὶ βαστάζουσα τοὺς παῖδας); AN, no (stopping utterance, 1317–19)

3. *Euripides*, *Supplikes* 980–1071: *Evadne* [p. 264] CR, perhaps for stunt jump?² CL, αἰθερίαν ἔστηκε πέτραν ἢ τῶνδε δόμων ὑπερακρίζει, τήνδ’ ἐμβαίνουσα κέλευθον, 987–9; τήνδ’ ἧς ἐφέστηκας πέλας πυράν, 1009–10; πέτρας ἐπὶ ὄρνις τις ὡσεὶ ... ὑπὲρ πυρᾶς ... αἰώρημα κουφίζω, 1045–7; ἄισσω, 1065; καὶ δὴ παρῆται σῶμα, 1070; SP, *ad hoc* structure on roof representing rock; Evadne perhaps seen climbing to top (a ramp from roof—κέλευθον?); actor jumps out of sight; AN, chorus (anap.)

4. *Euripides*, *Phoenissae* 88–201; *Servant and Antigone* [pp. 255–57] CR, no; CL, μελάθρων ἐς διήρες ἔσχατον, 90; κέδρου παλαιὰν κλίμακ’ ἐκπέρα ποδί, 100; ἀπὸ κλιμάκων ποδὸς ἴχνος ἐπαντέλλων, 104–5; ἔσβα δῶμα, 193; AN, n.a.

5. *Euripides*, *Orestes* 1567–1681: *Orestes*, *mute Hermione*, *mute Pylades* [pp. 262–63] CR, no; CL, τῶιδε θριγκῶι ... ῥήξας παλαιὰ γείσα, 1569–70; δόμων ἐπ’ ἄκρων τούσδε πυργηρουμένους, 1574; κάταιθε γείσα, 1620 (cf. Σ 1567, ταῦτα ἄνωθεν Ὀρέστης ἐκ τοῦ δώματός φησιν; 1573, κάτωθεν ἀναβλέψας [282]ὁ Μενέλαος); SP, three persons, reference to parapet, simultaneous appearance of Apollo (see III.B.2); AN, no (stopping utterance, 1567)

¹On the view of Denniston-Page (which I reject), ἄγκαθεν (3) = ἄνωθεν and provides another, clearer verbal clue about the position of the Watchman on the roof. I believe that the Watchman is lying with his head on his arms at the very beginning of his speech, but he may abandon this position almost immediately rather than deliver all of 1-21 while lying down.

²The stunt would be safer (and καὶ δὴ παρῆται more realistically reflected in the action) if Evadne was already attached to the crane on appearance and the crane was used to lower the actor (behind the skene building) as the line was spoken.

6. *Aristophanes, Acharnians 262–283: mute wife of Dicaeopolis* [pp. 258, 262] CR, no; CL, σὺ δ', ὦ γυναῖ, θεῶ μ' ἀπὸ τοῦ τέγους, 262; SP, moves from stage to roof during 246–261;³ AN, n.a.

7. *Aristophanes, Clouds 1486–1505: Xanthias and Strepsiades* [pp. 258, 268] CR, no; CL, κλίμακα, 1486; ἐπαναβάς ... τὸ τέγος κατάσκαπτε, 1487–88; ταῖς δοκοῖς τῆς οἰκίας, 1496; οὐπὶ τοῦ τέγους, 1502; SP, portable ladder used from stage, two persons on roof, removable boards; AN, n.a.

8. *Aristophanes, Wasps 1–155: Bdelycleon* [p. 262] CR, no; CL, ἄνω καθεύδων, ... οὐπὶ τοῦ τέγους, 68; ἡ κάπνη, 143; SP, Bdel. descends to reenter from side; chimney-top prop?; AN, n.a.

9. *Aristophanes, Lysistrata 829–64, 870–84: Lysistrata, Myrrhine and at least one other woman, then Lys. alone, then Myrrhine alone* [p. 261] CR, no; CL, ἡμεροσκόπος, 849; καταβάσα, 864; κατάβηθι, 873; καταβήσει, 874; κατάβηθι, 883; καταβατέον, 884; SP, parapet represented, Myrrhine from roof to stage through skene in 4 lines; AN, n.a.

10. *Aristophanes, Ecclesiazusae 877–975: Girl (but not Old Woman, II.A.4)* [p. 257] CR, no; CL, (Girl) καταδραμοῦσα τὴν θύραν ἄνοιξον, 962–63; (Old Woman) ἔστηκα, 879; ὅπως ἂν περιλάβοιμ' αὐτῶν τινὰ παριόντα, 881–82; παρακύψασα, 884; ὦιου ... προσάξεσθαί τινα, 885–86; SP, *ad hoc* construction of second story (no more than a panel pierced by a window?); AN, n.a.; ALT: (?) window high in regular skene façade

B. GODS

1. *Prometheus 114–283: chorus* [pp. 266–68] CR, no;⁴ CL, Prometheus unable to see approach; chorus unable to dismount directly onto stage-level, have no contact with Oceanus; κινάθισμα κλύω πέλας οἰωνῶν, 124–5; αἰθήρ δ' ἐλαφραῖς πτερύγων ῥιπαῖς ὑποσυρίζει, 125–6; πτερύγων θοαῖς ἀμίλλαις, 129–30; αὔραι, 132; ὄχῳ πτερωτῶν, 135; πέδοι δὲ βᾶσαι, 272; κραιπνόςυτον θᾶκον προλιπούσ' αἰθέρα θ' ἄγνόν πόρον οἰωνῶν, 280; SP, (individual?) winged car props, choreographed movements on roof(?); AN, quasi-announcement by Prometheus, 115–27 (lyrics followed by anap.)

³Why does Aristophanes bother to send the extra up onto the roof? Perhaps simply to mimic real-life behavior: rooftops and upper-story windows would be a good place for spectators (esp. citizen women?) to view processions in the adjoining street. Compare *Frogs* 129–30, where Dionysus is advised to view the torch race from a tower.

⁴In the scholia we find the belief that the chorus was on the crane (Σ 128a-b, διὰ μηχανῆς; 284b, καθήκασθαι τῆς μηχανῆς; 397a, αἰδεῖ ὁ χορὸς ... ἐπὶ τῆς γῆς κατεληλυθώς), with the contradictory reasoning that it would be strange for them to converse (from the orchestra level) with Prometheus, who is ἐφ' ὑψους (Σ 128), and that Prometheus invites them down because he was unable to address them as they fly above him (Σ 272c): these notes may reflect opposing theories as to where Prometheus' crag was situated, but there is no explicit statement that the crag is on the roof.

*2. *Sophocles, Ajax 1–133: Athena* [p. 278] CR, no; CL, (ambiguous because it is a night scene) Odysseus hears (φθέγγμ', 14; φώνημ', 16) but does not see her (ἄποπτος, 15) throughout(?) the scene; Ajax, in his altered psychic state, seems to see her from the first (at 91); AN, n.a.; ALT, (1) Athena not visible at all [283](unlikely);⁵ (2) Athena at stage level (if so, I prefer use of a concealed secondary door for entrance and exit)

3. *Sophocles, Philoctetes 1409–1451 (or 1471?): Heracles* [nn. 68, 100] CR, perhaps yes*; CL: ἤκω ... οὐρανόσδε ἔδρας προλιπών, 1413–14; AN: no (stopping utterance 1409–10)

*4. *Euripides, Hippolytus 1–57: Aphrodite* [pp. 275–76] CR, no; CL, ἔξω τῶνδε βήσομαι τόπων, 53; symmetry with Artemis; AN: n.a.; ALT: (1) she enters and leaves by concealed secondary door; (2) she enters from house, but leaves another way(?); (3) she enters and leave by an eisodos

5. *Euripides, Hippolytus 1283–1443: Artemis* [pp. 274–75] CR, perhaps yes*; CL, Hippolytus identifies her by fragrance (and voice), not sight (1391–93); SP, quick departure at 1440; AN, no (but Artemis herself begins with anap., 1283–95)

6. *Euripides, Andromache 1226–83: Thetis* [p. 269] CR, yes; CL, λευκήν αἰθέρα πορθμευόμενος, 1228–29; ἐπιβαίνει, 1230; AN, chorus (anap., 1226–30)

7. *Euripides, Supplices 1183–1234: Athena* [pp. 263–64] CR, perhaps yes*: CL: none; AN, no (stopping utterance, 1185–86)

8. *Euripides, Electra 1233–1359: Castor and Polydeuces* [pp. 268, 270 and n. 63] CR, yes; CL, δόμων ὑπὲρ ἀκροτάτων βαίνουσι, 1233–34; οὐ ... θνητῶν γ' ἦδε κέλευθος, 1235–36; πόντου σάλον πάσαντ' ἀφίγμεθ', 1241–42; διὰ δ' αἰθερίας στείχοντε πλακὸς, 1349; SP, two persons on crane; AN: chorus (anap.)

9. *Euripides, Heracles 815–73: Iris and Lyssa* [pp. 260, 268–89] CR, yes; CL, ὑπὲρ δόμων, 817; μ' ἐσπέμεις δόμους, 850; στείχ' ἐς Οὐλύμπον πεδαίρουσ', Ἴρι, γευναῖον πόδα· ἐς δόμους δ' ἡμεῖς ἄφαντοι δυσόμεσθ' Ἡρακλέους, 872–73; SP, two persons on crane, separate departures (crane vs. ladder or trapdoor); AN: quasi-announcement by chorus (panic, 815–21; ia. and lyric)

*10. *Euripides, Troades 1–97: Poseidon* [pp. 277–78] CR: no; CL, Hecuba is prostrate before the scene building, but not said to be asleep; separate destinations of Poseidon and Athena at end of scene; AN: n.a.; ALT: (1) P. uses concealed secondary door for entry and exit; (2) P. walks up eisodos (from sea, cf. λιπών Αἰγαῖον ... βάθος, 1) and departs same way; (3) canceled entry (from central door), departs by eisodos

*11. *Euripides, Troades 48–94: Athena* [pp. 277–78] CR, yes*; CL, ἔρπ' Ὀλύμπον, 92; AN, no (her greeting stops Poseidon's intended departure); ALT: (1) entry and exit by concealed secondary door at stage level; (2) land on stage via crane, depart by crane; (3) entry and exit by eisodos

⁵The view that she is unseen is already rejected in the scholia, which note that Athena is invisible to Odysseus but declare (Σ 14) ἔστι μέντοι ἐπὶ τῆς σκηνῆς ἢ Ἀθηνᾶ· δεῖ γὰρ τοῦτο χαρίζεσθαι τῶι θεατῆρι.

12. *Euripides*, *IT 1435–89: Athena* [p. 280] CR, yes*; CL, (?) συμπορεύσομαι δ' ἐγὼ, 1488; AN, no (stopping utterance, 1435–37)

13. *Euripides*, *Ion 1549–1618: Athena* [pp. 272, 280] CR, yes*; CL, οἴκων ... ὑπερτελής, 1549; δρόμωι σπεύσασ' Ἀπόλλωνος πάρα, 1556; ἔξευξ' ἄρματα, 1570; ἔψομαι δ' ἐγὼ—ἀξία γ' ἡμῶν ὁδοῦρός, 1616–17; SP, chariot on crane; AN, *Ion* (ia., 1549–52)

[284]14. *Euripides*, *Helen 1642–87: Dioscuri* [p. 280] CR, yes*; CL, πόντου παριππεύοντε πέμψομεν πάτραν, 1665; SP, two persons; AN, no (stopping utterance 1642–43)

15. *Euripides*, *Bacchae before 1330–78 (or –51?): Dionysus* [p. 273] CR, yes*; CL, if any, lost in lacuna; SP, contrast with earlier appearances on stage; AN, if any, lost in lacuna

16. *Iphigenia in Aulide fr. apud Aelian*, HA 7.39 (*Eur. fr.* 857): *Artemis* CR, yes?; CL, AN, if any, lost

*17. *Rhesus 595–674: Athena* [p. 274] CR, no; CL, (ambiguous because a night scene) καθ' ἡμᾶς τόνδ' Ἀλέξανδρον βλέπω στείχοντα, 627–28; δοκοῦσ' ἄρωγός ἐν πόνοις παραστατεῖν, 638; οὐκ οἶδεν οὐδ' ἤκουσεν ἐγγὺς ὦν λόγου, 641; AN, no (stopping utterance, 595ff.); ALT: (1) enter and exit via concealed secondary door; (2) enter and exit by eisodos

18. *Rhesus 885–982: Muse* [p. 270 and n. 63] CR, yes; CL, τίς ὑπὲρ κεφαλῆς θεός ... τὸν νεόκμητον νεκρὸν ἐν χειροῖν φοράδην πέμπει; 886–89, παῖδ' ἔχουσ' ἐν ἀγκάλαις, 948; SP, dummy corpse; AN, chorus (anap., 885–88)

19. *Euripides*, *Antiope fr. 48, 67–103 Kambitsis (= lines 64–97 Page): Hermes* CR, yes*; CL, Διὸς κηρύγματα ...] φέρων. 70; AN, no (stopping utterance, 67–68)

20. *Euripides*, *Erechtheus fr. 65 Austin, 55–end: Athena* CR, yes*; CL, none or lost; AN: no (stopping utterance, 54–58)

C. GHOSTS

*1. *Aeschylus*, *Eumenides 94–139: ghost of Clytemnestra* [n. 90] CR, no; CL, (?) emphasis on her presence in dreams of sleeping Furies (104, 116, 131); AN; n.a.; ALT: (1) stage level by Charonian steps; (2) stage level by concealed secondary door or main door; (3) stage level by eisodos; (4) unseen

*2. *Euripides*, *Hecuba 1–58: ghost of Polydorus* [p. 276] CR: perhaps yes*; CL, ὑπὲρ μητρὸς ... αἰσσω ... αἰωρούμενος, 30–32; ἐκποδῶν χωρήσομαι Ἐκάβηι, 52–53; AN, n.a.; ALT: (1) “Charonian steps”; (2) concealed secondary door; (3) eisodos

D. OTHER

1. *Aristophanes, Birds 267–93: four extras costumed as birds (one sings τοροτιξ̄ τοροτιξ̄, 267)*⁶ CR, no; CL, ὄρειβάτης, 276; λόφου κατειληφώς, 279; ἐπὶ λόφων, 293; AN, cf. 268, 274, 279, 287; ALT: appear at stage level, perhaps mount prop rocks or prop crag

II. SCENES FOR WHICH I REJECT USE OF ROOF LEVEL PROPOSED BY OTHERS

A. HUMAN CHARACTERS

1. *Sophocles, Philoctetes (whole play): all characters* Jobst proposes that Philoctetes' cave was on the upper level (leaving no higher level for Heracles to [285]appear on at the end, unless he is on the crane). I assume staging on the main level, with a slightly raised cave opening constructed at the central door (this could, but need not, have been built on the projected eccyclema).⁷

2. *Euripides, Orestes 1369: Phrygian Eunuch* An ancient commentator (Σ 1366) found the entry through the door announced in 1366–68 inconsistent with his interpretation (Σ 1371) of κεδρωτὰ παστάδων ὑπὲρ τέραμνα Δωρικός τε τριγλύφους (1371–72) and so theorized that 1366–68 were interpolated by actors ἵνα μὴ κακοπαθῶσιν ἀπὸ τῶν βασιλείων δόμων καταλλόμενοι. I agree with those who keep the lines and would have the Phrygian emerge from the central door.⁸

3. *Aristophanes, Acharnians 409–479: Euripides* The scholia show uncertainty about the staging, and a few phrases could be taken to imply the view that Euripides appeared on the upper level (Σ 398a, ἐπὶ ὑψηλοῦ τόπου καθήμενος; Σ 410a φαίνεται γὰρ ἐπὶ τῆς σκηνῆς μετέωρος), but the authors of these notes clearly had no firsthand information about staging and are simply wrong. I believe Euripides appears on a high couch on the stage-level eccyclema.

4. *Aristophanes, Ecclesiazusae 877–946: Old Woman* [p. 257; cf. I.A.10]

B. DIVINE CHARACTERS

1. *Aeschylus, Eumenides 64–93: Apollo* This staging was proposed by A. L. Brown, *JHS* 102 (1982) 29, and is rightly rejected by A. H. Sommerstein in his commentary *ad loc.*

2. *Prometheus (whole play): all characters except chorus in parodos* Kenner and Jobst propose that the crag to which Prometheus is fixed is constructed on the roof; that

⁶For this staging see K. J. Dover, *Aristophanic Comedy* (Berkeley and Los Angeles, 1972) 145.

⁷Cf. also II.B.2 *Prometheus*. Similarly, Kenner unnecessarily proposes that Andromeda in Euripides' play is fixed to a rock on the roof and that the caves in *Cyclops* and *Birds* are on the roof (Frickenhaus had put the cave of Pan in *Lysistrata* on the roof as well).

⁸See most recently Willink; for the opposite view see West, *op. cit.* (*supra*, n. 45) and *CQ* 37 (1987) 289–91 (he suggests that the Phrygian lowered himself from the roof or even squeezed himself through a metope and lowered himself to the stage).

the parodos shows the chorus ferrying between the paraskenia; and that at the end the crag structure sinks into the skene building from above. The elevator structure they assume for the finale is most unlikely. The lack of contact in the parodos can be explained by the fact that the chorus is above Prometheus, as the text implies, not below him. The play can be well staged with a rocky crag built in front of the central door (I would prefer to have this rock on the eccyclema for the final scene, but I do not claim this must have been so).

3. *Aristophanes, Peace 178–728: Trygaeus and Hermes* CL, εἰς τουτὶ τὸ κάτω [ἄντρον], 224; κατίδω, 361; πῶς δῆτ' ἐγὼ καταβήσομαι; 725; Jobst and others⁹ place the house of Zeus on the roof, have Trygaeus land there, converse with Hermes and others there, and draw the statue of Peace up through a [286]trapdoor onto the roof. I agree with those who put the house of Zeus on stage level and bring Peace “up” through the central door/cave: cf. 427, εἰσιόντες addressed to the chorus to clear the stones from the doorway; 417, 469. cooperation of Trygaeus and Hermes with the chorus.

C. GHOSTS

1. *Aeschylus, Persae 681–842: Darius* [n. 90]

III. CRANE USED, BUT (CERTAINLY OR APPARENTLY) WITHOUT ALIGHTING ON ROOF

A. HUMAN CHARACTERS

1. *Euripides, Andromeda fr. 124: Perseus* CL, διὰ μέσου ... αἰθέρος τέμνων κέλευθον πόδα τίθημ' ὑπόπτερον¹⁰

2. *Euripides, Bellerophon fr. 306–308: Bellerophon* CL, πτερόν, fr. 306; αἴρων πτέρυγας, fr. 307; SP, Pegasus prop on crane¹¹

3. *Aristophanes, Clouds 218–38: Socrates* CL, οὐπὶ τῆς κρεμάθρας ἀνήρ, 218; ἀεροβατῶ, 225; ἀπὸ ταρροῦ, 226; κατάβηθι ... ὡς ἐμέ, 237; SP, “basket” (or wicker mat

⁹Already in the scholia there is a trace of this view: Σ 727a, κατέλυσε τοῦ οὐρανοῦ τὴν ὑπόκρισιν. κάτεισι γὰρ ἐπὶ τὴν ὀρχήστραν κλίμαξιν; 727b, ἐχόμενος τῆς Εἰρήνης καταβαίνει ὁ πρεσβύτης ἐπὶ τὴν ὀρχήστραν. ἴσως δὲ καὶ ὁ χορὸς ἀνήλθεν εἰς τὴν ἀναγωγὴν τῆς Εἰρήνης (this last speculation shows an awareness of a serious objection to such a staging). When the cave is first referred to, a scholion simply notes that a cave is visible on stage: 224, ἔστι τι καὶ ἄντρον ἐπὶ τῆς σκηνῆς.

¹⁰There is no reason to doubt use of crane in the tragedy, even though Aristophanes apparently did not use it in his parody in *Thesm.*, thus creating a humorous incongruity between words and staging (1011, Eur. makes brief appearance at stage level at a distance, ἐκδραμών, described by Kinsman as παρέπτετο, 1014; interaction at 1098–1132 requires Eur. on stage level, despite quoted words of flying). For the view that the crane was used in *Thesm.* see Hourmouziades (*supra*, text n. 2) 154–55, Bodensteiner (*supra*, text n. 2) 669.

¹¹Pegasus probably appeared in *Stheneboea* (fr. 669.4, fr. 665a Snell [note τοῦδ']), but there is insufficient information to determine whether the crane was used.

or platform?) attached by ropes hanging from a hook; Socrates dismounts on stage;¹² AN, no (suddenly noticed by Strepsiades, ia. 218)

4. *Aristophanes, Peace 80–178: Trygaeus* [p. 271] CL, μετέωρος αἴρεται ἰππηδὸν εἰς τὸν ἀέρ' ἐπὶ τοῦ καθάρου, 80–81, etc.; SP, dung-beetle prop; actor delivers lines suspended for about 100 lines; address to μηχανοποιός, 174; beetle presumably removed shortly after 181 (not present when next asked for, 720–24);¹³ AN, slave (ia., 80–81; Tryg. himself chants anap. on appearance [and while in motion?])

5. See also VII.5 for *Perseus perhaps on crane in Cratinus, Seriphioi*; VII.1–[287]2 for *crane in Aristophanes, Daedalus (if Daedalus rather than Zeus was on crane) and Gerytades*; VII.4 for two examples in *Strattis*

B. DIVINE CHARACTERS

1. *Prometheus 284–396: Oceanus*¹⁴ CL, τὸν πτερυγῶκῃ τόνδ' οἰωνόν, 286; οἶμον αἰθέρος ψαίρει πτεροῖς τετρασκελῆς οἰωνός, 394–95; SP, griffin prop; presumably alights on stage; uncertain whether Oceanus dismounts and remounts; AN, no (but Oceanus enters chanting anap.)

2. *Euripides, Orestes 1625–1690: Apollo and mute Helen* [pp. 262–64] CR, yes*; CL, ἥδ' ἐστίν, ἦν ὀράτ' † ἐν αἰθέρος πτυχαῖς†, 1631;¹⁵ τῆσδε, 1639; ὦ Ζηνὸς Ἑλένη χαίρει παιῖ, 1673; ἐγὼ δ' Ἑλένην Δίοις μελάθροισ πελάσω, λαμπρὸν ἄστρων πόλον ἐξάνύσας, 1684–85; SP, two persons; roof already occupied by human characters; lines delivered while suspended; AN, no (stopping utterance, 1625); ALT: (1) crane used, but

¹²The scholia acknowledge the use of the crane here, but the figure on the crane is also assumed to be “inside” (as perhaps would be the case with a *thyromata*-stage with a hoisting mechanism concealed in the roof within the niche): cf. Σ 218b παρεγκύκλημα [= stage-direction] δεῖ γὰρ κρέμασθαι τὸν Σωκράτην ἐπὶ κρεμάθρας καθήμενον, καὶ τοῦτον [sc. Στρεψιάδην] εἰσελθόντα καὶ θεασάμενον αὐτὸν οὕτω πυθέσθαι, Σ Tzetz. 218a εἰσελθὼν ὁ Στρεψ. κτλ.; likewise Σ *Peace* 82j Ὁ Τρυγαῖός ἐστιν ἔνδοθεν ταῦτα λέγων καὶ παρακελευόμενος ἐπιβεβηκὼς ἤδη τῷ καθάρῳ καὶ μετέωρος ἀρθείς.

¹³See also II.B.3. Platnauer assumes that the dung-beetle's stall is represented by a fence on stage; if so, then the crane is presumably deployed before the start of the play, with the suspended dung-beetle concealed behind the fence, and the crane will have to have an extended arc to reach from this position (which cannot be too close to the central door) to somewhere on the other side of the central door, where the house of Zeus is shown. More likely, however, the stall is understood to be in the courtyard behind the door of Trygaeus in the skene facade, and Trygaeus on the beetle rises from behind the skene, as usual, making a much better effect.

¹⁴In the scholia, the assumption that the chorus is on the crane is (necessarily) accompanied by the view that Oceanus simply rides his beast on the stage (Σ284a-b, esp. καιρὸν δίδωσι τῷ χορῶι καθήκασθαι τῆς μηχανῆς).

¹⁵The words ἐν αἰθέρος πτυχαῖς are probably intrusive from 1636, but there is no need to delete the couplet 1631–32, as some have done. I take the couplet as evidence solely of Helen's presence, not as proving her higher position. See Willink *ad loc.* West (*supra*, n. 45) has proposed accepting the variant ἐν αἰθέρος πύλαις, “at the gates of heaven”: I find the phrase unconvincing in itself and the fit between the phrase and Helen's presence on the crane hovering over the skene uncomfortable.

figures alight on a special platform higher than or separate from roof; (2) crane not used, figures appear on a platform reached by ladder (theologeion?)

3. *Aristophanes, Birds 1196–1261: Iris* CL, ἐγγὺς ἤδη δαίμονος πεδαρσίου δίνης πτερωτὸς φθόγγος ἐξακούεται, 1197–98; πέτει, 1199, 1201; ἐπίσχει τοῦ δρόμου, 1200, ταυτηνὴ τις οὐ ξυλλήψεται ἀναπτόμενος; 1205f.; οὐκ ἀποσοβήσεις; 1258; πετομένη, 1260; SP, reference to noise; probably stays suspended throughout scene (note threat, 1205f.), 66 lines in duration; AN, chorus (ia.) announces noise, not sight of Iris

4. (?) *Aeschylus, Memnon or Psychostasia* (?) (cf. *Radt, pp. 375–76*): *Eos* Pollux, 4.130: ἡ δὲ γέρανος μηχανήμα ἐστὶν ἐκ μετεώρου καταφερόμενον ἐφ’ ἀρπαγῆ σώματος· ὧι κέχρηται Ἡὼς ἀρπάξουσα τὸ σῶμα τὸ Μέμνονος; Pollux may not have in mind the same device as used in the fifth-century theater, but the scene would appear to require the crane; SP, actor comes down to stage level and (with help) receives dummy corpse in arms, which is then raised aloft with actor (cf. *Muse in Rhesus*, who already has corpse)

5. See VII.1 for crane in *Aristophanes, Daedalus* (if *Zeus* rather than *Daedalus* was on crane); VII.4 for *Strattis, Phoenissae* (*Dionysus*?)

IV. GODS APPEARING AT STAGE LEVEL

1. *Aeschylus, Eumenides: Apollo, Hermes, chorus, Athena*¹⁶ (interacting with human characters)

[288]2. *Prometheus Bound: all characters except Io divine*

3. *Prometheus Unbound: all characters except Heracles divine*

4. *Euripides, Alcestis 1–76: Apollo, Thanatos* (no human character present) [p. 273] CL, λείπω μελάθρων τῶνδε φιλιτάτην στέγην, 23; τόνδε Θάνατον εἰσορῶ πέλας, 24; πρὸς μελάθροις, 29; στείχω δ’ ἐπ’ αὐτήν, 74 (Apollo emerges from, Thanatos goes in through, the palace door)

5. *Euripides, Ion 1–81: Hermes* [pp. 273–74] CL, ἐς δαφνώδη γύαλα βήσομαι τάδε ... ὁρῶ γὰρ ἐκβαίνοντα ... τόνδ’, 76–79; entrance may be canceled, whether from temple or side or concealed door; exit through concealed secondary door (to fit eavesdropping on action, 77)

6. *Euripides, Bacchae prologue and passim: Dionysus* (in disguise) [p. 273]

7. *Rhesus 595–674* (?): see above I.B.17

8. *Various satyr-plays, e.g. Sophocles, Dionysiscus, Ichneutae, Inachus: free intermingling of human and divine characters on stage level a distinguishing trait of the genre*¹⁷

9. *Menander, Dyscolus: Pan* CL, τὸ νυμφαῖον ὅθεν προέρχομαι, 2¹⁸

¹⁶See Taplin, *Stagecraft* (supra, text n. 1) 388–90 for arguments in favor of Athena’s arrival on foot at *Eum.* 397, not on the crane.

¹⁷Other satyr plays cited by Müller, *infra* n. 19, as possibly involving divine characters: *Aeschylus, Ixion* and *Sisyphus* plays.

V. INSTANCES FROM LOST PLAYS FOR WHICH THERE IS INSUFFICIENT INFORMATION

A. THEOLOGEION

1. *Aeschylus*, *Psychostasia* (cf. *Radt*, pp. 374–75): *Zeus with scales, Thetis and Eos* Pollux 4.130: ἀπὸ δὲ τοῦ θεολογείου ὄντος ὑπὲρ τὴν σκηνὴν ἐν ὕψει ἐπιφαίνονται θεοί, ὡς ὁ Ζεὺς καὶ οἱ περὶ αὐτὸν ἐν Ψυχостаσίαι. This could well represent a later form of production; depending on its location in the play, such a scene could have been played at stage level (if, however, the scene came between scenes played by mortals on stage level, use of the roof seems to me likely).

B. GODS ATTESTED OR ASSUMED IN FRAGMENTARY PLAYS¹⁹

1. *Aeschylus*, *Danaides* (fr. 44: *Aphrodite*); *Edoni* (fr. 61: *Dionysus*); *Nereides* (fr. 150: *chorus of Nereids; Thetis?*) *Oreithyia* (fr. 281: *Boreas*); *Pentheus* (cf. hyp. *Eur. Ba.: Dionysus*); *Phryges* (*T 1, 23 Radt: Hermes*); *Xantriae* (fr. 169: *Lyssa*)²⁰

[289]2. *Sophocles*, *Tereus* (fr. 581: *Hermes?*); *Ajax Locr.* (fr. 10c: *Athena*); *Niobe* (fr. 441a: *Apollo and Artemis [on stage, shooting into palace door?]*); *Peleus* (p. 391 *Radt; Dictys Cret. 6.9, ...Acastus ... in ipso aditu a Thetide ... reprimatur: Thetis*); *Syndeipnoi* (fr. 562: *Thetis*); *Triptolemos* (fr. 598: *Demeter*)²¹

3. *Euripides*, *Alexandros* (*uncertain whether prologue speaker was a god and which one*); *Archelaus* (cf. *Hyg. Fab. 219: ex responso Apollinis*); *Erechtheus* (fr. 39 *Austin: Poseidon prologue speaker*); *Hippolytus A* (*cult announced by a god before fr. 446*); *Hypsipyle* (fr. 64 iii 42 = fr. 64, 152 in margine: *Dionysus*); *Meleager* (fr. 537: *spoken by a god or a prophet*); *Phaethon* (cf. hyp. ad finem: ἐθ]έσπισ[εν]); *Phrixos B* (cf. hyp. ad finem: *Nephele?*); *Tennes* (cf. hyp. ad finem: προειπόντος δ' Ἀπόλλωνος)²²

¹⁸Cf. perhaps *Aspis* 98 (“a goddess like me couldn’t come on next”: W. G. Arnott); there are no clues for other prologue gods in Menander, but stage-level appearance fits the nonthreatening, confidential tone of such gods (cf. *Ion*). A reader reminds me of the Lar in Plautus’ *Aulularia*, which may be based on a divinity or hero in the Greek original (perhaps by Menander): the Lar emerges from (line 3) and goes back inside by the house-door.

¹⁹In compiling this list I have found useful the check afforded by comparison with Ericus Müller, *De Graecorum Deorum Partibus Tragicis*, *RGVV* 8 (Giessen, 1910).

²⁰Müller (*supra*, App. n. 19) 19-20 cites a dispute over whether *Lyssa* appeared on the crane or at stage level. Additional Aeschylean instances alleged by Müller include: *Aetnaeae* (fr. 6, prediction of cult); *Heliades* (a god to explain metamorphosis); *Hoplion Krisis* (fr. 174, a prayer to absent or address to present *Thetis?*); *Myrmidones* (*Thetis?*); *Perrhaebides* (fr. 327, spoken by a prophet or a god?); *Semele* (*Amphidromus?*); cf. fr. 222 with *Radt’s* app.); *Toxotides* (*Artemis?*).

²¹Other Sophoclean instances alleged by Müller: *Andromeda* (to describe catasterism of monster); *Iphigenia* (*Artemis?*); *Meleager* (narrative of metamorphosis of daughters?); *Thamyras* (*Muses?*).

²²Other Euripidean instances alleged by Müller: *Alcmena* (saving Alc., revealing truth); *Alope*; *Antigone*; *Bellerophon*; *Danae*; *Ino*; *Melanippe* A and B.

4. Rhesus *alternative prologue* (hyp. Rhes., *Eur. fr. 1109: Hera and Athena*)

C. GHOST IN FRAGMENTARY PLAY

1. *Sophocles, Polyxene* (*fr. 523: Ghost of Achilles*)

VI. SELECT TESTIMONIA ABOUT ROOF

1. *Aristophanes, Aeolosicon fr. 10 Kassel–Austin: δι’ ὀπῆς κἀπὶ τέγους* (possibly a general description rather than reference to staging; context may have referred to entry of adulterers or being a spectator from the house)

2. *Plato Com. fr. 112 Kock: ὁρᾶτε τὸ διήρες ὑπερῶιον* (the terms *διήρες ὑπερῶιον* are considered synonyms by ancient lexicographers; the combination may be redundant for “second story” or perhaps suggest “double upper story” = “second and third stories”—or is *ὑπερῶιον* here an intrusive gloss?)

VII. SELECT TESTIMONIA ABOUT THE CRANE

See also above III.A.3 and 4 on *Aristophanes, Clouds and Peace*; III.B.4 for *Pollux 4.130* on *γέρανος*.

1. *Aristophanes, Daedalus fr. 192 Kassel–Austin: ὁ μηχανοποιὸς ὁπότε βούλει τὸν τροχὸν / ἔαν †κάνεкас† λέγε “χαίρε φέγγος ἡλίου”* (reference or address to cranemaker [=operator], but interpretation uncertain: is *τροχὸν* a pulley?) (either Zeus or Daedalus?)

2. *Aristophanes, Gerytades fr. 160 Kassel–Austin: περιάγειν ἐχρῆν τὸν μηχανοποιὸν ὡς τάχιστα τὴν κράδην*

3. *Antiphanes, fr. 191 Kock: (1–2) μακάριόν ἐστιν ἡ τραγωιδία / ποίημα κατὰ πάντ’ ... (13–16) ἔπειθ’ ὅταν μηδὲν δύνωντ’ εἰπεῖν ἔτι / κομιδῆι δ’ ἀπειρήκωσιν ἐν τοῖς δράμασιν, / αἴρουσιν ὡσπερ δάκτυλον τὴν μηχανήν, / καὶ τοῖς θεωμένοισιν ἀποχρώντως ἔχει* (see App. 2, n. 3)

[290]4. POxy. 2742, *fr. 1* (in addition to items 2 and 5) quotes *Strattis, Atalantus, ἀπὸ τῆς κράδης, ἥδη γὰρ ἰσχὰς γίν[ομαι], / ὁ μηχανοποιὸς μ’ ὡς τάχιστα καθελέτω; and Phoenissae: δι’ ἐτέρων μοχθηρίαν / ἦκω κρεμάμενος ὡσπερ ἰσχὰς ἐπὶ κράδης (= fr. 74, 8ff. CGFPR) (Dionysus?)²³*

5. *Cratinus, Seriphioi fr. 222 Kassel–Austin: ἀφικνηῖ μετέωρος ὑπ’ αὔρας* (addressed to Perseus on crane?)

6. *Plato, Cratylus 425d: ὡσπερ οἱ τραγωιδιοποιοὶ ἐπειδάν τι ἀπορώσιν ἐπὶ τὰς μηχανὰς καταφεύγουσι θεοὺς αἴροντες*

²³The name is present in the nominative in the preceding line, but the intervening words are unintelligible.

7. *Demosthenes* 40.59: ἄλλος μὲν οὐδεὶς ... μεμαρτύρηκε, Τιμοκράτης δὲ μόνος, ὥσπερ ἀπὸ μηχανῆς, μαρτυρεῖ μὲν..., φησὶν δὲ...

8. *Aristotle, Poetics* 15.1454^a37–^b6: φανερόν οὖν ὅτι καὶ τὰς λύσεις τῶν μύθων ἐξ αὐτοῦ δεῖ τοῦ μύθου συμβαίνειν, καὶ μὴ ὥσπερ ἐν τῇ Μηδείᾳ ἀπὸ μηχανῆς ... ἀλλὰ μηχανῆι χρηστέον ἐπὶ τὰ ἕξω τοῦ δράματος, ἢ ὅσα πρὸ τοῦ γέγονεν ἂ οὐχ οἶόν τε ἄνθρωπον εἶδέναι, ἢ ὅσα ὕστερον, ἂ δεῖται προαγορεύσεως καὶ ἀγγελίας

9. *Pollux, 4.128*: ἡ μηχανὴ δὲ θεοὺς δείκνυσι καὶ ἥρως τοὺς ἐν ἀέρι Βελλεροφόντας ἢ Περσέας, καὶ κεῖται κατὰ τὴν ἀριστερὰν πάροδον, ὑπὲρ τὴν σκηνὴν τὸ ὕψος. ὃ δ' ἐστὶν ἐν τραγωιδίᾳ μηχανή, τοῦτο καλοῦσιν ἐν κωμωιδίᾳ κράδην; 4.131, αἰώρας δ' ἂν εἴποις τοὺς κάλως, οἳ κατήρτηνται ἐξ ὕψους <ὡς> ἀνέχειν τοὺς ἐπὶ τοῦ ἀέρος φέρεσθαι δοκοῦντας ἥρως ἢ θεοὺς

10. [*Plutarch*], *Proverb. cent. 2, 16* [Paroem. gr. 1.338]: κράδη ... ἡ ἀγκυρίς, ἀφ' ἧς οἱ ὑποκρίται ἐν ταῖς τραγικαῖς σκηναῖς (v.l. μηχαναῖς) ἐξαρτῶνται, θεοῦ μιμούμενοι ἐπιφάνειαν, ζωστήρι καὶ ταινίαις κατειλημμένοι²⁴

²⁴Cf. Hesych. s.v. κράδη.

APPENDIX 2: SUPPORT AND CLEARANCE FOR THE CRANE

A number of nineteenth-century scholars believed in a regular second-story construction in the late fifth-century theater because they regarded it as indispensable to the form of crane that they assumed. Bethe (*supra*, text n. 2, 204–29) suggested tall *paraskenia* with beams across the gap to carry a moving device for suspension of flying figures. Similarly, Dörpfeld and Reisch (*supra*, text n. 2, 232–33) imagined that the crane was rolled along on the roof of the second story. This sort of suspension device may have been used in later theaters, but the earliest testimonia favor quite a different form of crane, as C. Robert pointed out long ago (“Zur Theaterfrage,” *Hermes* 32 [1897] 430ff.). Even more recently, Hourmouziades was inclined to posit the regular construction of a small “superstructure,” partly to hide the support of the crane and partly to provide an opening for entrance on high more “dignified” than a trapdoor. But any such vertical obstruction in front of the crane, it seems to me, would actually necessitate a taller and more cumbersome support for the crane and make operation more difficult.

[291]The speed and maneuverability of the crane depend on its form. If vertical motion was controlled by a winch, vertical movement may have been quite slow, especially if the beam was fixed (as, for instance, in the crane illustrated in Dearden).¹ But the most probable form of the fifth-century theater crane is a counterweighted beam, a sort of asymmetrical seesaw which either pivots on its own fulcrum point or moves up and down only within a pivoting upright. Mechanically, this form corresponds to one of the oldest and most widespread lifting devices used in the Mediterranean, the swing beam or *shadouf* used for raising water.² As Robert saw, the notion of raising the *μηχανή* like a finger (Antiphanes fr. 191.15 Kock = App. 1, VII.3) may well be taken to allude to the movement³ of a counterweighted device in which the beam is visible during operation

¹A similar fixed-jib crane is illustrated in P. Thiery, *Aristophane: fiction et dramaturgie* (Paris, 1986) 91, but the scale is inaccurate if the actor and the prop (the dung-beetle of *Peace*) are to clear the roof.

²Cf. J. G. Landels, *Engineering in the Ancient World* (Berkeley and Los Angeles, 1978) 58–59 and J. P. Oleson, *Greek and Roman Mechanical Water-Lifting Devices: the History of a Technology* (Toronto, 1984) 5 and figure 1.

³There is controversy over the meaning or meanings of *αἴρουσι δάκτυλον* in Antiphanes. The phrase *αἴρειν δάκτυλον* seems to be extant only in Antiphanes and in the lexicographic entry *αἴρε δάκτυλον* transmitted in Photius *a* 646, Suda *ai* 281, et al. (Theodoridis gives further refs.): *παροιμία· τίθεται ἐπὶ τῶν ἀπαγορευόντων ἐν τῇ ἀγωνίᾳ. ἐπαίρεσθαι γὰρ τὴν χεῖρα σύμβολον τοῦ νενικῆσθαι*. Casaubon and Valckenaer accepted this notice as relevant (comparing Antiphanes’ *ἀπειρήκωσιν* with *ἀπαγορευόντων*) and interpreted the phrase as a sign of the tragic poet’s surrender. Meineke (*Frag. com. gr.* 3.106–107), arguing that the hand signal referred to was a Roman and not a Greek custom, followed Grotius in interpreting the phrase as a proverb for ease (“as easily as one lifts a finger”). Stoic philosophers sometimes used the bending or unbending of a finger as paradigm of a trivial or insignificant action, but I find no other evidence for a Greek proverb “lift a finger.” One who follows Meineke might be tempted to

and in which the vertical movement of the actor is caused by the motion of the beam, not by the movement of the suspending cable. Moreover, a more recent papyrus fragment of Aristophanes uses the verb *περιάγειν* (App. 1, VII.2), which confirms the pivoting capability of the crane and counts against the sort of rolling device assumed by Dörpfeld and Reisch and Bethe.

There are so many uncertainties about the positioning of the crane's support that it is impossible to arrive at a single most probable reconstruction. But it is worthwhile to consider a few possibilities in order to learn the effects of different choices of position and dimensions.

[292]

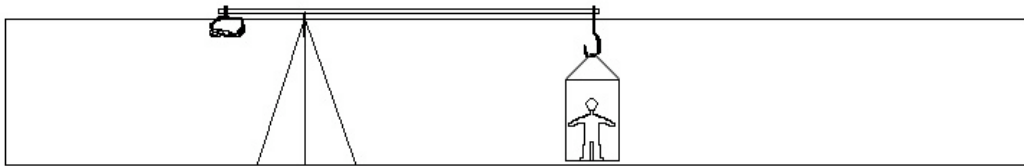


Figure 3. Rear view of skene, showing crane and actor on roof of hall.

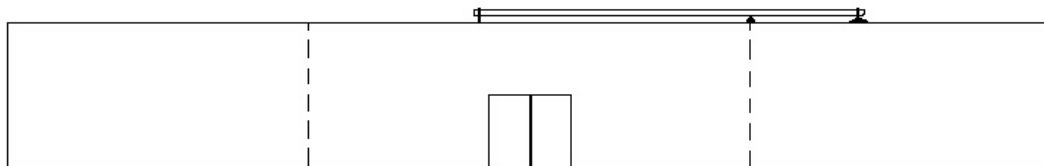


Figure 4. Front view of skene, showing crane at rest.

I assume, first of all, that the crane was operated from behind the skene building: that is, the support structure was not built on the roof of the skene itself or inside the skene, but either on the ground behind the terrace or, more likely and more easily, on the roof of the hall which was built behind the skene and whose roof was at a lower level

deny that the phrase alludes to the motion of the crane. But Meineke was wrong to deny the Classical Greek origins of the raised finger as signal of defeat in boxing, since the motif is in fact found on vase-paintings: Gow on Theocr. 22.130 cites E. N. Gardiner, *Greek Athletic Sports and Festivals* (London, 1910) figs. 133, 141, 146; see also M. Andronicos et al., *Athletics in Ancient Greece: Ancient Olympia and the Olympic Games* (Athens, 1977) figs. 126, 127, 133. J. Jüthner and E. Mehl, "Pygme," *RE Suppl.* 9 (1962) 1346–47 both list illustrations and note that *ἀπαγορεύειν*, *ἀπειπεῖν*, and *ἀπαυδᾶν* are idiomatic terms for giving up in a boxing match. (I owe these references to my colleague Stephen Miller.) On the whole, therefore, I believe that Casaubon and Valckenaer have rightly identified the primary meaning in Antiphanes, though I do not rule out that the phrase may evoke ease as well. But whatever its primary meaning, a comic poet can (and should here) be credited with a punning use of the word: that is, Antiphanes chose this metaphor because it also alludes to the physical appearance of the crane's movement.

than the roof of the skene.⁴ I assume, next, for the sake of illustration, a skene building such as proposed by Pickard-Cambridge (it is deeper than that proposed by Newiger and so presents somewhat greater demands than a shallower building would). I have tested various measurements with a small scale model.

For an initial test, I posited a pivot point of the crane-beam located about 22 feet [or 6.7 meters] to one side of center: fig. 3 shows it on the right from the point of view of the audience, but it doesn't matter which side (Pollux 4.128 claims the crane was located on the left—*κείται κατὰ τὴν ἀριστερὰν πάροδον*—but we do not know whose left he meant). If the pivot is located a few feet [or about a meter] back from the back wall of the skene, and at approximately the height of the skene-roof (this means that if the crane is parked in a horizontal position it is not too much of a visual distraction or eyesore from the point of view of the audience: see figure 4), then necessary functions can be performed with a beam that measures 30 feet [or 9.1 meters] from pivot to hook (and about 5–10 feet [or 1.5–3 meters] on the other side of the pivot, to allow for attachment of a counterweight). With these dimensions and this position, an actor suspended from a harness (cf. App. 1, VII.10) or standing on a trapeze can easily be deposited on the front of the roof above the central door. The distance from the hook to the actor's feet could be as little as about 8 feet [or 2.4 meters], if the actor is to stay aloft or alight on the roof. If the height of the skene building above the stage is about 15 feet [or 4.6 meters], as seems probable, and the actor is to be lowered to the stage in front of the skene, then a suspension of [293]about 15 feet [or 4.6 meters] (from hook to actor's feet or trapeze platform) would be needed, and the landing point would be to one side of the central door and not very far from the front wall of the skene (figure 5).

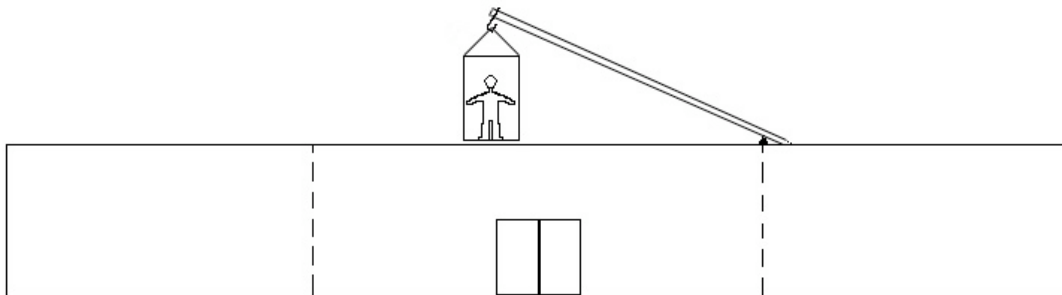


Figure 5. Front view of skene, showing crane in operation.

With this low pivot position, clearances are adequate so long as there is no obstruction (panels, partial second story) rising above the roof level within the arc of the swinging crane. If an obstruction is added, the crane will have to be raised to a rather clumsily steep angle. I would suggest that the operators of the crane (two or three strong men) controlled the counterweighted end directly by means of ropes (or perhaps with

⁴See *supra*, n. 35.

ropes through a pulley—cf. App. 1, VII.1—but a compound pulley would have slowed vertical movement and required a fixed point that might have made pivoting more complicated or restricted). They will have required some space around the base of the crane supports to control the rotation of the beam: at a minimum the beam must have been capable of a 90° movement, so the operators needed to be able to move the counterweighted end at least 90° by moving from the side of the support to the back of the support; if a turn of 120° or even 180° was needed (see below), the operators needed clearance on both sides of the support as well as behind it.

If the pivot point is raised, the crane becomes more visible: for what it is worth, Pollux 4.128 implies a higher position (*ὑπὲρ τὴν σκημὴν τὸ ὕψος*), but in post-Classical times the crane may have had a different form. With higher pivot point, the suspension distance can be reduced when the actor is to be lowered to the stage (on the other hand, the control ropes on the counterweighted end probably become longer, a possible source of clumsiness for the operators). If, however, there is a permanent second story such as Pickard-Cambridge proposed, not only will the higher pivot point be necessary, but the suspension distance will be considerably lengthened and the clumsily steep angle of operation will be troublesome or dangerous (not to mention problems of visibility for the crane operators, who I would prefer to believe were not in open view on or behind the roof).

It would even be possible to get the horizontally parked crane out of sight of most of the audience by placing the pivot point a little below the roof level, but this requires an even longer beam and a longer suspension for the actor to reach [294]stage level, creates very close clearance for the counterweighted end when the actor is raised, and produces a greater risk that the beam might strike the roof during the lowering of an actor to stage level.

If the pivot point is moved closer to the center of the skene, the length of the beam can be correspondingly reduced, and this may be desirable, since a shorter beam will be lighter and more easily controlled (on the other hand, with a longer beam one can produce a greater vertical movement of the actor with a proportionately smaller vertical movement of the counterweighted end). The minimum length of the beam is produced if the pivot point is actually centered: the longer end of the beam will then be a few feet longer than the depth of the skene—longer by the distance from the back wall to the pivot point plus the clearance of the actor from the front wall when he is deposited on stage. With a skene as shallow as, say, 8 feet [or 2.4 meters], the long end of the beam could perhaps have been reduced to as little as 15 feet [or 4.6 meters].

No matter which position is used, it seems to me that a permanent centered second story such as proposed by Pickard-Cambridge renders the use of a crane of the most probable form more difficult and more dangerous.

Two other practical issues need to be considered. First, if flight from point to point (e.g., for Trygaeus or perhaps Perseus) or flight toward a parodos (e.g., if Athena in

Ion actually heads in the same direction as *Ion* and *Creusa* and does not simply drop back behind the skene in the same place from which she appeared) is actually to be represented by more than a token horizontal fluttering, the crane will have to pivot more than 90° (and preferably 180° to bring the suspended actor back over the hall behind the skene) and the roof will probably have to be clear of obstructions not only over the center of the skene but also over the side toward which the crane pivot is situated. Second, even when an actor is deposited on the roof for a lengthy speech, the crane would need to be fixed in place, and for this purpose one could use cleats around which the control ropes are lashed to fix the crane. (This implies that the beam was slightly off balance, the actor's end even without the actor's weight being slightly heavier than the shorter, counterweighted end.) This same method could be used, moreover, to secure the crane in one position for a protracted speech by an actor who is not deposited on the roof (this is the possibility I prefer for *Apollo* in *Orestes*). In *Trygaeus*'s long scene on the crane, the periods of motion are accompanied by (or at least begin with the onset of) anapaests (82ff., 154ff.), but he may have been held motionless during the iambic trimeters (except at the end, where he is still in motion during 173–76). For comic effect *Trygaeus*'s flight will have been clumsy and irregular, whereas gods, one assumes, would be moved more smoothly and would speak from a stable position.

[ADDENDUM November 2005

In preparing this postprint, I have corrected some typographic errors and I have added in square brackets measurements in meters. The figures had to be redrawn, and measurements in meters have been added to them as well.

Without any attempt to take full account of scholarship since 1990, I would like to mention the following:

Pp. 266–68: For an alternative approach to staging *Prometheus*, see John Davidson. “Prometheus Vincit on the Athenian Stage,” *Greece and Rome* 41 (1994) 33–40.

Addition to App. 1, I.A: It is very possible that Bellerophon on Pegasus spoke from the crane (alighting on roof?) at the end of Euripides' *Stheneboea*, as this would allow him to taunt Proetus with impunity in the manner of *Medea* at the end of *Medea*. See *TrGF* 5.2.647, app. crit. ad test. iia.31–36.

App. 1, V.B.2, Soph. *Niobe*: Artemis probably and Apollo possibly appeared on the roof, not on stage level; if so, this example belongs under I.B.

App. 2: On the engineering aspects of the crane, see now O. Lendle, “Überlegungen zum Bühnenkran,” in E. Pöhlmann et al., *Studien zur Bühnendichtung und zur Theaterbau der Antike*, Studien zur klassischen Philologie, Band 93 (Frankfurt am Main, 1995), 165–72.]