Commentary on Ibrahim Allawi’s “Some Evolutionary and Cosmological Aspects of Early Islamic Town Planning”

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Introduction

The 1970s and 1980s were a pivotal period in the international perception of Islamic society and Muslim populations. Newly wealthy Arab states such as the United Arab Emirates announced their geopolitical status with ambitious building programmes; revolution in Iran gave a new Islamic valence to an established regional power; and the Iran–Iraq War and the Soviet invasion of Afghanistan raised international awareness of the lived experiences of Muslim societies. Population estimates for those decades show that the number of Muslims worldwide increased half again faster than overall global population growth (Houssain Kettani 2010, table 6). This was particularly true in Europe, which saw a 45% increase in the proportion of its population that identified as Muslim, and the United States, where that number hit a remarkable 220%.

These demographic, economic and geopolitical developments were matched by scholarly ones. The 1970s saw a new historical-critical form of Islamic Studies, which situated early Islam within broad geographic and chronological contexts. This was exemplified most sharply by the methodological thought-piece Hagarism, by Patricia Crone and Michael Cook, and most broadly by the growth of the field of Late Antiquity. In such a context, it is perhaps no surprise that 1987 saw at least two efforts to theorise the shape and function of Islamic cities in light of historical precedent. One of these is Janet Abu-Lughod’s article on “The Islamic City”, to which I will return presently. Another is the focus of this commentary, Ibrahim Allawi’s effort to identify “evolutionary and cosmological aspects to early Islamic town planning”. Published in 1988, his paper was part of a symposium held the previous year at the Aga Khan Program for Islamic Architecture at Harvard and MIT, a program which was itself a result of increased Islamic patronage for global scholarship over the previous decade. Each of these articles in its own way brings...
the study of Islamic city forms into the light of historical-critical scholarship, but they take very different approaches and reach very different conclusions. Thus, while Allawi’s work will be the focus of the current commentary, Abu-Lughod’s article deserves some attention as a counterpoint.

Janet Abu-Lughod is of course best known for her 1989 monograph Before European Hegemony, which deals with pre-modern transregional trade networks during the century of Mongol domination across Eurasia. Published two years earlier, “The Islamic City” (Abu-Lughod 1987) was a follow-up to her first monograph, Cairo: 1001 Years of the City Victorious (Abu-Lughod 1971). That book, she admits, falls into a pattern of orientalist scholarship that describes some essential form for the “Islamic city” based on a handful of Mediterranean examples. After tracing three traditions of scholarship leading to such morphologies, Abu-Lughod proposes a different approach, which she sees already emerging in scholarship of the previous years and which interprets cities not as manifestations of an essential form, but as the result of social dynamics. Thus, patterns of juridical distinction between religious communities, gender segregation and a decentralisation of regulations that Abu-Lughod identifies as intrinsic to Islamic society tend towards certain organisations of space common across Islamic cities. Or in her words, “cities are processes, not products” (Abu-Lughod 1987, 172).

By contrast, Allawi proposes two highly prescribed morphological models for early Islamic city planning. At the opening of his article, he promises to investigate “two currents in early Islamic town planning and architecture” (Allawi 1988, 57) as they relate to one another and to later urban structures. These two currents (which are nowhere defined) are explored through “two main town-plan types, the Kufa model and the Baghdad Round City” (Allawi 1988, 57). This is followed by an argument against the view that Islam had emerged from a cultural vacuum, positing instead that there were deep Arabian cultural traditions that informed city building and other aspects of early Arab imperialism.

Here already Allawi overlooks the fact that his straw man vision of the past was by 1987 already obsolete: the ex nihilo view of Islam was already untenable. Throughout the article, there is a general failure to engage with the emerging field of Late Antiquity or other lines of scholarship that were active when he wrote. By the time of the Harvard symposium, Peter Brown and others had for nearly two decades already placed Islam within a broad cultural continuity of empire and faith that marked both the late Roman and Sasanian realms. Thus, while Allawi’s identification of uniquely Arab cultural elements is welcome, he fails to place them alongside those imperial precedents that Muhammad and his early successors would have known from the great empires that abutted the Arabian Peninsula.

Kufa

Allawi’s first case study is Kufa, which he calls the model for the “open city”. As elements of the open city, Allawi lists a haram, a geometric plan, the orientation of that plan and a market. The haram and market correspond to elements of the city that Abu-Lughod addresses, both as they appear in the morphologies described by earlier orientalists and
as important sites of the social functions of urban life in her new approach. Unfortunately, Allawi does not return to these elements in his discussion, focusing instead on the orientation and especially the geometric plan of Kufa.

This discussion of the plan of Kufa is based on a system of fifths, or *akhmas*. This, Allawi asserts, is described by al-Tabari first for the Arab camp at Sharaf just before the Battle of Qadisiyya. In fact, the system of “fifths” mentioned there in a letter from the caliph ʿUmar relates not to the shape of the city but to the battle array of the Arab army (al-Ṭabarī 1879, 2223–2224 = 1991, 16). Nevertheless, Allawi asserts that this “method of planning is inferred from later references to how Kufa was planned” (Allawi 1988, 59), without noting what those references are. Remaining with al-Ṭabarī, who does offer an extensive description of the founding of Kufa, we find no justification for Allawi’s claim. Instead, Kufa is described as a central congregational precinct surrounded by radiating thoroughfares along which Saʿd ibn Abī Waqqās settled the various tribal components of his army (al-Ṭabarī 1879, 2488–2492 = 1989, 69–73).

In his unsubstantiated assertions of Arab geometric systems for town planning, we see a pervasive theme of Allawi’s article: he repeatedly disregards a significant body of evidence that the Arab armies adapted local forms for the immediate needs of their rapid military expansion and that this practice of adaptation continued into later, less urgent city foundations such as Baghdad. Even within Tabari’s description of the foundation of Kufa, we read of the use of Persian *spolia* to build the central congregational prayer hall. In other regions, Arab armies adapted the quadrangular Roman military encampment in Syria and the Persian round city in Iraq and Iran (Arce 2007, 494–495). It may be that Allawi’s understanding of the akhmas relies on a different source which he has left unnamed. Indeed, he details a very specific geometric form for a city that suggests a basis in some source. While he does not provide figures for this, carefully following his description results in a form identical to the standard square horoscope figure that appears in astrological texts beginning in about the tenth century AD. That form consists of a central square centred within a larger square, the intervening band being divided into a series of zones to represent portions of the sky.

The similarity between the Islamic horoscope figure and the akhmas described by Allawi may not be pure coincidence, but it is certainly not a relationship of cause and effect. In other words, it seems highly unlikely that Kufa was laid out to match a horoscopic figure, or that the city and the horoscope emerge from some shared understanding of cosmic space. If the nested square form of the akhmas that Allawi describes does reflect some uniquely Arab mode of understanding space – cosmological or terrestrial – then it might provide an interesting point of entry into Arabian cosmology. For that to be pursued, Allawi’s source will have to be identified and then compared to Johannes Thomann’s (2008) argument that a Chinese origin lies behind the square horoscope form.

Without pursuing that speculative line of analysis, we are probably best off understanding the nested square form as a relatively simple geometric way to depict a centre and its surrounding regions. This sort of centre–periphery mentality is natural to any hierarchically minded human system. Whatever its origin, it presents an obvious way for Arabic scientists to depict the heavens in a horoscope. Astrology is premised on the idea
that the observed motions of planets in the heavens have some effect on the human world. It is inherently geocentric in its outlook, and so the same kind of centre–periphery mode for understanding space holds true for it as for Chinese cosmologies or Arab encampments.

The system of akhmas, in Allawi’s rendering, was replaced by that of the *asbaʿ*, or sevenths, based on nested hexagons. Again, there is little evidence that this system was ever really applied to the city of Kufa, and its origins are simultaneously described as a natural strategy for efficiently organising space and uniquely located in “indigenous pre-Islamic Arab traditions” (its relation to the Persian geographic notion of *keshvars* is overlooked). Indeed, the passage describing the asbaʿ comes again from Tabari and relates again to the organisation of the Arab army. According to Tabari, Saʿd restructured his army into divisions of seven, in which form it stayed until under Muʿawiya it was again reorganised into a four-fold system. In any case, there is no evidence given here that the system of akhmas or asbaʿ, if either ever was in fact used for the layout of Kufa, became a model for subsequent city building.

**Baghdad**

The second of Allawi’s case studies concerns the ‘Abbasid capital, the Round City of Baghdad, which he claims was “visualized as a grand cosmic astrolabe” recording the position of the planets at the time of the city’s founding to establish a new epoch from which to date subsequent events (Allawi 1988, 62). The involvement of astrologers at the founding of Baghdad is well attested and versions of the city’s horoscope survive in the works of al-Biruni and Ibn al-Faqih, as Allawi describes. A decade after Allawi’s chapter was published, Dmitri Gutas (1998) provided the seminal study of early ‘Abbasid knowledge projects. There, Gutas explains how the astral sciences were among the first embraced by the young caliphate, which adapted previous Sasanian practices of royal patronage as a marker of dynastic legitimacy. Here we see Allawi’s best alignment with subsequent scholarship in his basic willingness to consider astrology among the forces motivating decisions about city planning and other aspects of early ‘Abbasid court culture. He marks the ‘Abbasid shift towards ideas of “cosmic kingship” and an “undisguised faith in astrology” as a hallmark of the age (Allawi 1988, 62), a topic picked up a decade later by Aziz al-Azmeh (1997).

Despite the important place of astronomy and astrology within ‘Abbasid patronage, they remain, in Allawi’s words, “subjects still unfortunately unintelligible save to the initiated few and historians of science” (Allawi 1988, 62). In fact, astrology occupies an important middle ground between complexity and simplicity. The forces at play are literally out of this world, the mathematics underlying their study immensely complex, the terminology arcane, the number of overlapping variables dizzying. This makes a full understanding of the astral sciences the domain of a few highly trained specialists, as much now as it was in the eighth century AD. However, it also creates incredible interpretive space for those who are willing to massage the numbers or select which factors to emphasise. The interactions of fixed stars and zodiac signs, the houses of the ecliptic, the planets as they wander through each of these, the lunar nodes and solar eccentric – all
these create almost limitless interpretive possibility. With horoscopic astrology, profound (and profoundly convenient) insights into the passage of history can be expressed with mathematical precision. Allawi seeks to do this, and I will do the same here, not necessarily to present a counter-theory to Allawi’s interpretation, but to show how easy it is to construct such an argument and to demonstrate where Allawi’s falls apart.

Allawi’s treatment of Baghdad involves two main discussions: one on the horoscope itself, the other on how it relates to the city plan. The first of these discussions includes some interesting points of analysis, but makes crucial oversights which, when acknowledged, may help us better understand the significance of the horoscope. Allawi’s interpretation of the town plan, on the other hand, should be dismissed entirely.

The Horoscope of Baghdad

The horoscope of Baghdad is preserved by al-Biruni and corrected by Ibn al-Faqih. Allawi compares these two versions with calculations taken from modern ephemerides tables (Allawi 1988, 65, table 1). As he states, “the horoscope of Baghdad fits well with modern computations, except for a difference of about ~2d 50m in the case of the sun, Jupiter, Venus, and Mercury”. Allawi does not linger on this difference, though as we will see, those slight three degrees may hold the key for understanding the original purpose of the horoscope. Of immediate note is the fact that the celestial bodies affected are the Sun and Jupiter, as well as the inferior planets whose observed positions are linked to that of the Sun. Three degrees is a significant error in observation: it amounts to about three days’ ephemeral movement for the Sun and significantly more than that for Jupiter, guardian planet of Baghdad and one of the most easily observed and measured planets in the sky. The fact that Jupiter, the Sun and the Sun’s dependent planets are all misreported here by the same amount demands exploration. Also significant is the fact that Biruni does not seem to report the location of Jupiter, of all planets. Such deviation from observation and from standard practice in reporting a horoscope suggest that the locations of the Sun and Jupiter are particularly charged in the interpretation of this horoscope, and we would do well to investigate them closely.

Allawi provides the starting point for deciphering this issue when he mentions Biruni’s description of the ascendant to the horoscope. He explains that an ascendant at 6° of Sagittarius was selected for the city’s founding because it corresponds to the azimuth of Baghdad as measured from what he calls “the mythical city of Kandakes” (also spelt by him as “Kandakas”), which “is supposed to have been located in eastern China” (Allawi 1988, 63). His source for this is al-Tanukhi’s summary of Abū Maʿshar’s Kitab al-Uluf, and he describes this location – more usually transliterated as “Kangdiz” or “Kangdez” – as the traditional prime meridian of Persian and early Islamic astral sciences. As Allawi explains, casting a horoscope for Baghdad with an ascendant of 6° Sagittarius places the point of the spring equinox at the meridian of Kandakes, allowing future scientists to pin their observations to the founding of Baghdad while remaining consistent with the Kandakes system. The founding of Baghdad in this way was both a new epoch and a moment of continuity. As the ‘Abbasids adopted their Persian predecessors’ practice of patronage for astral sciences, they gave it the unmistakable mark of their new dynasty: a new starting
point from which to measure celestial time. Allawi gives two methods to confirm that 6° Sagittarius rose at Baghdad at 13:57 on 31st July, 762 AD, the moment he posits as the founding of the city and the start of the new celestial epoch.

In looking for confirmation of the choice of 6° Sagittarius as the ascendant for Baghdad, Allawi points to Yaqut, who indicates a distance of 117° between the “face” of Baghdad and the azimuth of Mecca. Without explaining what is meant by the “face” of Baghdad, Allawi points out that 117° equals the distance between Biruni’s ascendant (6° Sagittarius) and the location he reports for the Sun in the horoscope (8°10' Leo, the precise distance being 117°50’). However, we must contend with the fact that this location for the Sun is wrong by almost three degrees, as described above. In fact, at the moment that 6° Sagittarius ascended on 31st July, 762 AD, the Sun was at closer to 10°55’ or 10°58’ Leo, and so the distance to the ascendant was closer to 114°. Where we do see a difference of 117° is between the actual location of the Sun and that of Jupiter, which was a few degrees below the horizon, at 8°48’ Sagittarius.

If Allawi is correct in linking this horoscope to Yaqut’s comment about the “face” of Baghdad and the azimuth of Mecca, then the “face” of Baghdad is to be read as Jupiter, not the ascendant. This makes intuitive sense, given the relation between planet and city. Less obvious is why the azimuth of Mecca should be equated with the position of the Sun. Accepting that correlation for now, when we reassign the “face” of Baghdad to Jupiter, we can better understand why 31st July, 762 AD might have been chosen as the date of Baghdad’s foundation. It was on that date that the Sun approached within 117° of Jupiter for the first time since 27th June of the previous year. The exact moment that occurred was closer to 14:50 local time, while Jupiter rose above the eastern horizon at about 14:08. Such close alignment between the rising of Jupiter and the arrival of the Sun at a point 117° away from Jupiter makes for a compelling horoscope. Unfortunately, the potent celestial location of 6° Sagittarius was, by then, already several degrees above the eastern horizon.

Finally, then, we have the material for understanding the consistent three degrees of error in Biruni’s report of the location of Jupiter, Sun, Venus and Mercury. The fact that they are misreported so consistently suggests that their position relative to one another is significant: I grant that the 117° difference between the Sun and Jupiter could in fact be that significance. However, placing 6° Sagittarius as the ascendant was also important for resetting the cosmic clock. By misreporting Jupiter and the Sun almost three degrees from their actual location, the Baghdad horoscope aligns the “face” of Baghdad with the ascendant, while preserving its degree of difference from the Sun. Venus and Mercury, whose location is pinned to that of the Sun, were shifted as well, perhaps also to preserve their relative position.

The interpretation I have just offered does not make for good astral science. If in fact the ascendant of 6° Sagittarius was intended to reset the cosmic clock, then the clock is broken from the outset, since four of the seven visible planets are reported in the wrong location. If it makes for bad astronomy, though, it makes for good history. In adapting pre-Islamic Iranian astrological traditions into their new regime, the ‘Abbasids clearly knew what conjunctions and correspondences fed their overall ideological program. Astrology
is a science for humans to use to understand the world. I suggest that Caliph al-Mansur was less interested in knowing the exact array of stars at the moment he founded his city than in figuring out how he might best present that array to make his imperial point. For a casual observer, even one knowledgeable enough to know that Jupiter rose in the early afternoon of that summer day, the discrepancies between the reported horoscope and observed reality mattered little. What mattered was the message of a city whose very existence marked a new age of human history.

The Form of Baghdad

Turning to Allawi’s discussion of how the horoscope might have mapped onto the actual shape of Baghdad, we find too many instances of irresponsible interpretation to catalogue here. I name just two. First, much of the interpretation relies on overlaying a diagram of the city’s horoscope onto the generally accepted plan of the city as devised by Ernst Herzfeld and K. A. C. Creswell. In doing this, Allawi draws the horoscope in a round format, with the spring equinox at the right of the figure, so that the ascendant appears in the lower left. There is no particular reason for picking this orientation except that it allows the ascendant of 6° Sagittarius to align roughly with the qibla of Baghdad. On a horoscope oriented in this way, 6° Sagittarius appears at 204° from vertical. The qibla of Baghdad is around 199° from true north. The correspondence is close enough for compelling figures, but the difference is nowhere explained. If indeed the central precinct of Baghdad were laid out at an orientation of 204°, then the mihrab in the central mosque would have had to be offset from the orientation of the building by five degrees. While this provides an interesting postulate as to the origin of the term al-zawra, “the crooked”, as an appellation for Baghdad, Allawi does not entertain that possibility. In any case, the complete lack of archaeological evidence for the layout of the Round City makes any such interpretation impossible. It is no accident that Le Strange (1924), Creswell (1932), Lassner (1970a, 1970b) and others who have written about the form of the early city are quick to note the very speculative nature of such work.

As a second example, we can look at Allawi’s discussion of the streets (sika) that divide the residential quarters between the walls of the Round City and the central precinct. Yaqubi names the number of sika between each pair of gates, and while the gates themselves are said to be equidistant from one another, there is an unequal number of streets in each quadrant: 11 between the Basra and Kufa gates, 12 between the Basra and Khurasan gates, eight between the Kufa and Sham gates and nine between the Sham and Khurasan gates. Herzfeld, Creswell and others have interpreted this evidence in drawings showing the sikas within each quadrant as evenly spaced, so that the residential blocks on either side of the Basra gate are smaller than those that flank the Sham gate. Using this, along with the observation that there are a total of 20 sika in each set of opposite quadrants (8+12 and 9+11), Allawi asserts that the arrangement “presupposes an arrangement based on an eccentric design” (Allawi 1988, 67). This is not itself evident, yet Allawi takes it as an invitation to reorient the basic layout of the city, placing the Basra gate in the southwest (Allawi 1988, 68, fig 10) (Allawi also interprets al-zawra as “eccentric” as further evidence for this interpretation). As a result, in Allawi’s proposed reconstruction, the Khurasan gate
appears in the southeast, the Sham gate in the northeast, the Kufa gate in the northwest and the Basra gate in the southwest. Such a plan absolutely defies geography and basic sense. It shows Allawi’s interpretation for what it is: a hypothesis that relies on the rich world of astrological terminology for substantiation in the absence of archaeological or textual evidence.

Put briefly, much of Allawi’s discussion of the shape of Baghdad is an attempt to apply concepts from astrology to reconstruct the layout of the city and demonstrate that it was a physical manifestation of its own horoscope. This is, in short, exactly the kind of form-focused interpretation that Abu-Lughod de-emphasises in favour of the social forces that lead to specific urban formations. It should also be remembered that Baghdad was by any measure a unique construction, designed to express a new political reality and then quickly modified and adapted as any living city might be and eventually abandoned as the great urban concatenation of the ʿAbbasid capital district expanded outward and along the Tigris (Micheau 2008, 225–226). Such a historical process is in line with Janet Abu-Lughod’s approach and with those of other scholars presenting on the form of Islamic cities at conferences and colloquia during the early critical engagement with Islam in Western scholarship (El-Ali 1970; Lassner 1970a; Elisséeff 1980).

References


