Living Stones, Crying Walls

The Dangers of Enlivenment in Architecture from
Renaissance putti to Warburg's Nachleben

ALINA PAYNE

The Builder's Sacrifice

There is an old Romanian legend that has architecture as its main pro-
tagonist. The richest and most famous of Romanian monastery churches
endowed by the then reigning prince Negru-Voda is located in the southern
plains at Curtea de Arges and was built in the first quarter of the sixteenth
century (1512–1517) by Master Manole (Figure 15.1). As he and his team
were building the church, so the story goes, it collapsed time and again
such that they began to despair and pray, and in response to these prayers
Manole had a vision: God advising him that if he wished to bring his work
to completion he must immure the first woman who would arrive that
day at the site, that is, build her into the church wall. Only thus would the
building stand. All workers had their wives bring them their midday meal
and knowing the danger facing the one who would arrive first they dis-
loyally let them know ahead of time not to come that day; all but Manole.
Knowing that his beautiful, young and much beloved wife was about to
arrive carrying his meal Manole prayed and prayed that something would
happen to obstruct her way and that she would not reach the building
site that day — but whatever came in her way, she triumphed over it and
driven by her love for her husband overcame all obstacles, thus walking
into her sacrifice, the place of her martyrdom. And so with blood and tears
the building was built, not, however, without Manole hearing his wife's
anguish as the walls were closing in against her body — against her thighs,

against her breasts, against her face. The more beautiful the part of her body, the more beautiful also that part of the wall. Eventually the building was completed and it stood there in its full splendor, such splendor indeed that the prince did not want his craftsman to repeat this deed and build yet another, even more beautiful church elsewhere. So he made him a prisoner, locked up on the roof of the church, exposed to the winds and snows, without food, facing certain death. And thus Manole conceived a final artifact, even more daring than his first: like Icarus (or Leonardo for that matter, who had similar dreams at the same time) he built a set of wooden wings for himself out of the thinnest shingles remaining on the roof, to attempt to fly off the tall building. Needless to say, like Icarus, his courageous attempt failed and he fell to his death: where his body crashed against the ground a well of crystal clear water sprang up and it remains a fountain, inexhaustible to this day. Both building and site thus retain the memory of these events: the sound of the bellringing is understood to be his wife's voice calling, and the water of the well their tears. The story is not only to be found in Romania, but there are versions in various Southern Balkan countries (in Greece, in Bulgaria, Serbia, Albania, Montenegro, as well as Hungary and Inner Mongolia).[1]

This then is a story of architecture, sacrifice, death and violence, about ritual killing as much as it is about love, loyalty and beauty. It is about a

building as body, where there are no boundaries between them, a paradigmatic story of agency. As Mircea Eliade signalled long ago, this myth about architectural creation speaks of archaic survivals in the south-eastern parts of Europe—of a conception of construction that could only last if it was animated by a transference of life and soul. Since architecture is connected with soil and water and disturbs the order of nature as it comes into being it also must make its peace with it.[2] And the fusion of organic and inorganic matter, animate and inanimate that this story describes is precisely that moment of attempted reconciliation. But it is also a cautionary tale and in more ways than one. It warns of pride and competition with nature and God in the making of beauty, and of its price. Here animation or enlivenment reaches another level and hints at the dangers involved when the object/subject distinction is erased, when the boundary is broken. It suggests that liveliness can be threatening, that the transition from life to stone and back again is dangerous, that it takes human sacrifice to animate architecture; in short that enlivening architecture is a complex and even frightening process.

Although not often dealt with in the scholarly literature such stories are not marginal to the history of architecture and their survival can be found not only in folklore but also in high culture, a residue from archaic traditions that informed basic definitions of architecture. Vitruvius's story of the origin of the orders, in particular Callimachus's story (iv, 1, 8)—the birth of the Corinthian order—is also one of sacrifice, probably the survival of a Greek myth like so much else in his work.[3] The maiden dead in the flower of her youth on whose tomb the acanthus grew entwined around the offering basket that contained her possessions is the agent that allows a new order to come into being and remains forever embedded in it. This story is not that distant from Manole's—not a sacrifice on *his* part, but the architecture that emerges is conditioned by a death and transformation into stone; once again a woman is the 'ritual' victim. Indeed, in the mid-fifteenth-century Francesco di Giorgio shows an immured maiden animating the architectural member, literally encased in it, enlivening it with its grace and spirit. The myth of the caryatids condemned to remain in their prisoner status for eternity holding up the superstructure of the temple is only one other instance of an equally terminal and dangerous cross-over between body and (beautiful) architecture.[4]

Despite such rich sources the topic of the animated image and its agency has been traditionally associated in art history almost exclusively

15.2 Hopi Indian, 1924. Photographic print. Library of Congress, Washington DC.

with images—painted, sculpted, in photographs, in movement, in found objects, in clouds, in the moon, in lakes like in mirrors, and so on. The popularity of Alfred Gell's work among art historians, like the renewed fascination with Aby Warburg—the most outspoken advocate of art's agency in our discipline (one need only think of the links in his work between his experience of the snake ritual (Figure 15.2) of the Hopi Indians and his work on Renaissance culture)—speaks volumes about the significance this issue has claimed in recent scholarship.[5] But on the whole architecture has taken a back seat in this discussion—not surprisingly perhaps since for some time now so much effort has gone into detaching it from the visual arts and linking it to engineering, industry, mass-production, to the anonymity of standardisation and the response to social and urban needs.

Yet such a distancing—then as now—is that much more surprising since architecture's basic forms (or at least classical architecture's basic forms) had been closely connected to human bodies—not only in proportions but also in shapes: swelling torsos, graceful silhouettes, stressed muscles like hanging locks and jewelry, had been its referents of old, and the connections between live, moving bodies and architectural members

15.3 Francesco di Giorgio Martini, Detail of f. 13v, Codice Ashburnham 361. Biblioteca Medicea Laurenziana, Florence.

were taken for granted and exploited from Vitruvius through Palladio and beyond (Figure 15.3). The understanding of *mensole triglifate*, for example, as brackets deformed by weight-bearing, of the 'soft' *fregio pulvinato* as squashed by the accumulated weight above and of the attic base as similar to the chest of a horse straining forward or the columnar entasis as the thickening of the human waist under pressure, are recurrent visual tropes used to explain architectural forms.[6] If not imitating the body directly as did the figural arts and thereby inviting the blurring of boundaries between object and subject, architecture nevertheless engaged in a physical dialogue with the viewer's body by way of anthropomorphism at the very least, so some interest of its crossing into 'living presence' might have been expected and sought.

From this starting point then I would like to explore the residual tragic dimension of enlivenment in architecture and examine some neglected areas that suggest a different kind of enlivenment and potential for agency specific to this art. Anthropology and Alfred Gell offer one perspective through which to engage it; Giorgio Agamben's reflections on the dangers of beauty another. Although Agamben's concern is mostly with the issues of aesthetics raised by modern/contemporary art, he does offer the other pole for my investigation. From Plato through Nietzsche and Rimbaud, he notes, there is a continuous discourse about the dangers of beauty — both for the viewer (hence the exclusion of poets from the republic) and for the artist.[7] And it is this 'danger' and its location that this essay proposes to explore.

Burckhardt, Wölfflin and Warburg

Certainly the generation of Burckhardt and Wölfflin intuited something along these lines, though most of the discussions were embedded within the parameters of empathy theory. As such they did not expand beyond a formal analysis with psychological overtones and did not engage issues
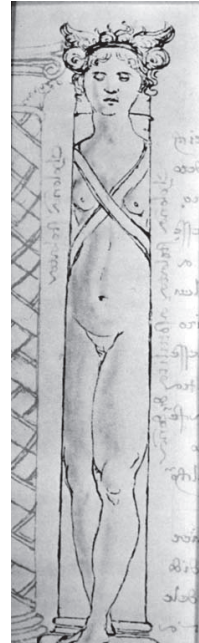
of content, meaning, or iconography. When Wölfflin, for example, defines ornament as 'Ausdruck überschüssiger Formkraft' and architecture more generally as 'der Gegensatz von Stoff und Formkraft' and argues that 'der Stoff selbst sehnt sich gewissermassen der Form entgegen' in his *Prolegomena zu einer Psychologie der Architektur* (1886), he projects physical states (a sense of one's own body weight, heartbeat, muscle reactions, etc.) onto architecture. In conclusion he argues that the 'Formphantasie eines Volkes' arises from a sense of self, of one's own body, of deportment and clothing (this is where the famous Gothic shoe comes in) and not from materialistic origins (which he calls 'nonsense') such as construction materials, climate, function and so on.[8] The relation object/viewer that Wölfflin proposes ultimately is an apperception-based one, where the self is projected into the forms of architecture both by the maker and the viewer. The effect is that of enlivenment, or better put, of a need to think of architecture as if enlivened.

For Wölfflin much of his behavioural reading of architecture was indebted to a sculpture-aesthetic—not surprisingly as in the wake of Winckelmann and Neo-classicism, sculpture had claimed the leading role in the development of a critical vocabulary in the arts and had become the high-density site for aesthetics. 'Körperlichkeit' (corporeality) was Wölff-

15.4 Pergamon Frieze, from J. Overbeck, *Geschichte der griechischen Plastik*, 3rd edition, Leipzig 1882.

lin's mantra (the solid mass that connected buildings with human bodies) and the evident intersection point between architecture and sculpture. It was August Schmarsow who first noticed this bias and attacked it, as for him space was architecture's leading stylistic feature and he decried the fascination with sculpture that had obscured this fact and that had been additionally reinforced by the arrival of the Pergamon marbles in Berlin starting in 1879 (Figure 15.4). Indeed, as I have argued elsewhere, the shock effect of the Gigantomachia had not only hit at the very core of the 'noble simplicity and quiet grandeur' (*edle Einfalt und stille Grösse*) of Winckelmann's Neo-classical ideal that exalted the art of the fifth century BC as the climax of all aesthetic attainment, but had also allowed, indeed demanded, a re-evaluation of the early modern Baroque—that is, of a period far distant both from Phidias and Athens, and from Pergamon and the Attalid kings.[9] Wölfflin's reading of classical architecture as a sculptural system eliciting a psychological response of empathy from the viewer was profoundly indebted to this event and the debates among archaeologists and art historians it caused. Much revolved around the relief and its 'painterly' qualities as well as the pathos that was so dramatically and indecorously displayed when compared with such monuments of classical perfection and restraint as the pedimental sculpture of the Aegina or Olympia temples. Yet, in Gell's words, 'How can an entity possess "intentional psychology", without being biologically alive?'[10] Or put another way, is there a dimension that goes beyond the projection of states of being by the viewer and does the link object/viewer present additional layers of interaction that escaped nineteenth-century aesthetics?

Jacob Burckhardt had also weighed in on this issue. Already in 1877 in a letter from Rome to Max Alioth (his architect friend from Basel) he acknowledged a more tolerant position towards the Baroque, which he had maligned in no uncertain terms in his 1855 *Der Cicerone*: 'My respect towards the Baroque grows every day and I am increasingly inclined to view it as the end and main consequence of the *lebendige Architektur*.'[11] What is particularly striking here is Burckhardt's notion of a 'lebendige Architektur' or enlivened architecture. With 'lebendig' he denotes a quality of architecture, the quality of being intrinsically alive rather than being animated by an outside agent, as Wöfflin implies with his psychology-based theory. It is a subtle point, I grant, but it struck me as significant—perhaps an intuition on Burckhardt's part that the Apollonian conception of the Renaissance he had and that was so well served by Quat-

trocento architecture, was incomplete—that there was a life, a *Lebendigkeit* within architecture, an inner juice, a living flesh that gave it its liveliness beyond proportions and grids, columns and capitals, triglyphs and curling brackets.

Such an admission was not visibly central to Burckhardt's oeuvre as it was known through publications. That Burckhardt had an Olympian view of the Renaissance was how Aby Warburg read him.[12] Indeed, he saw Burckhardt's focus on architecture as a clear confirmation of this vision, just as he saw Nietzsche's attention to dance and music as the reason he had formulated the definition of art as profoundly dialectical, that is, containing the memory of both an Apollonian/cerebral and a Dionysian/orgiastic component. Warburg's own research had already been profoundly conditioned by his own experience of the snake ritual of the Hopi Indians, which had led him to think of *Pathosformeln* in Renaissance art—of the recurring, obsessive, archaic anthropomorphism and ritual that survived atavistically and kept the Apollonian, intellectual dimension in equilibrium. Warburg makes the connection between these insights and his close re-reading of Nietzsche's *Geburt der Tragödie* (1886) both in 1905 and in the 1920s and he uses them for his important lecture on Ghirlandaio's workshop and Roman antiquity which he gives in Rome in 1929.[13] In this Nietzschean context, Warburg saw Burckhardt as intuiting but resisting the insight that the art he studied was permeated by an Apollonian/Dionysian dialectic and therefore drawing the veil over its Bacchic components. For Warburg, Nietzsche (who had been Burckhardt's student) was the first to reveal the importance of the Dionysian component in art against the prevailing archaeological wisdom of his time and to suggest that it lies at the root of a particular style.[14] Dance, movement, sound are also part of Burckhardt's reading of the Renaissance, but Warburg noted that he did not follow up on them even as he acknowledged and recovered the significance of performance in Renaissance culture. Ultimately Warburg sees two distinct strategies in the reading of *all'antica* art, both profoundly conditioned by their objects of study: on the one hand Nietzsche paired emblematically with the work of Agostino di Duccio (illustrating the wild, bacchic/orgiastic survival in Renaissance art) and on the other, Burckhardt and the Renaissance architects (the calm and elegant) (Figure 15.5).[15]

Of course Warburg did not deal with architecture as such and in any event he seemed to leave it out of the animistic equation. Yet he intuited the danger and tragedy of agency; and, had he known it, he probably would

15.5 Meanad, Agostino di Duccio, Oratory of San Bernardino, Perugia, 1457–1462.

have liked the story of Master Manole. Indeed, he reproaches Nietzsche for his lack of knowledge of folklore and anthropology, both of which would have given him a better sense of the historical recurrence, or phobia as he calls it (in the sense of obsessive repetition, or *Nachleben*), of the archaic Dionysian motifs of the participant's ecstatic dissolution in the artwork.[16] In a famous passage from the *Schlangenritual* paper he read at Kreuzlingen (albeit cleaned up into a coherent structure by Fritz Saxl from his notes) Warburg makes probably his most insightful observations on this head:

> The departure point is the following: I consider man to be an animal who handles things, whose activity consists in establishing connections and separations. This causes the loss of the organic sentiment of the 'I' because the hand allows him to grasp concrete objects, which have no nervous system because they are inorganic, but which extend nevertheless the 'I' through this inorganic agent. Here lies the tragedy of man who in handling things extends beyond his organic limits... Where do all these questions come from regarding the enig-

mas of empathy in front of inanimate nature? Because in fact there exists for man a state which can unite him to something—precisely in handling and holding things—with something that corresponds to him, but that does not flow through his veins. The tragedy of clothes and of the tool is the history of the human tragedy in the broadest sense, and the most profound book written on this is the *Sartor Resartus* by Carlyle.[17]

Warburg thus intuits that the continuity from body to clothes to instruments to architecture, the un-interruptedness that is the basic premise of agency (and that the magic of the archaic society of the Hopi Indians so powerfully conveyed) is a complex condition. Most importantly, he recognises that in fact there is *no* such organic continuity however much each successive layer seems born of and touches the previous one, yet the 'I' can and does extend beyond its limits through touch, and enacts the profound and atavistic desire that organic and inorganic natures merge, in other words, the desire that lies at the root of all artistic agency. This is also where Warburg and Gell cross since the successive layers Warburg recognises as profoundly tied to yet organically distinct from the body are also those that permit Gell to speak of a 'distributed body/person'. The convergence between image and things (images most often, but it applies to layers that surround the person as in Warburg's example as well) is based on the idea that the appearances of things are material parts of things.[18]

Warburg's vision of an orgiastic even demonic aspect to art, as well as the complexity of agency raises the question of what darker forces might be unleashed once these boundaries between object and subject are transgressed. Just how benign really is this state of 'entering' the object, how precarious is the 'I' (in Warburg's words) once its integrity is compromised? Or, as Agamben wonders, had such dissolution already disappeared from the experience of art in (early) modernity, if not from its making? These are questions that do not turn up in the Olympian Burckhardt for all his intuition of 'Lebendigkeit'. Nor do they turn up in Wölfflin and Lipps, Schmarsow and Riegl, although the empathy theory itself to which they subscribed, begs these questions and they were profoundly felt by the seismograph that was Warburg. So one is led to ask further: is there a danger in enlivenment as presented by architecture or can it be appreciated objectively, with aesthetic detachment and no loss of self? That is an essential question that the second part of this essay will address and I would like to

propose a few areas where one might look—areas generally neglected both in architectural and art-historical scholarship, interstitial areas between architecture and sculpture that tend to be marginalised.

Putti as Ornament

Although architecture was not an issue for Gell, one of the 'thick' sites for exploring agency that he focused on was ornament. Dubbing it 'technology of enchantment' he argued (citing Sartre and Mauss) that ornament acted as an adhesive device, attaching persons to decorated objects, and went as far as to dub it artistic 'fly-paper' that entwined the viewer, even bodily, in its web. He went even further to submit the notion of ornament as performative inasmuch as it calls for a mental and physical exercise to trace it.[19] This was certainly not the direction in which either Burckhardt, Wölfflin or Warburg pointed. But they did share the concern with ornament. Both abstract and mimetic in architecture—ranging from mouldings to figural sculpture attached to buildings—it had been recognised as architecture's prime site of eloquence. It was there that Wölfflin located most of the empathy generating devices and it is to ornament that Burckhardt pointed when he spoke of a 'lebendige Architektur'. Was it also the site of its agency?

One frequently occurring device in Italian Quattrocento and later architecture/sculpture is that of the putti series that turn up on friezes and column bases, on pedestals of large ensembles and frames, as panels or sculpted in high relief, and sometimes in the hybrid medium of *sgraffito* as well (Figure 15.6). These are not images like those of easel paintings, in colour, telling stories; nor are they narrative sculpted panels as were often attached to both interior and exterior walls. Rather, they remain in the domain of serial ornament: repeated identical forms, alternating, of garlands, putti, cornucopias, chimaeras, flowing ribbons that interrupt the layers of make-believe ashlar stone of the palace walls. In the range that includes column capitals as well as reclining pedimental figural forms they constitute a sculptural enlivenment of wall mass, not individualised figures.[20] More than anything they bring movement into this static, block-like, heavy, profoundly immobile and cubic architecture. And just like Warburg's *nympha* that rushes inexplicably into the scene, somewhat incongruous and at odds with the profound decorum and poise of

15.6 Detail of *sgrafitto* decoration, Palazzo dell'Arte della Seta, Florence, fifteenth century.


15.7 Music-making Angel, Agostino di Duccio, Oratory of San Bernardino, Perugia, 1457–1462.

the quiet domestic scene in Ghirlandaio's *Birth of the Virgin* in the Torna-buoni chapel, so the putti function like an architectural 'extra', as *beweg-tes Beiwerk*, or to use another Warburg turn of phrase, as 'unmotivierte Bewegungsmotive' (unjustified movement motifs) (Figure 15.7).[21] Both the pagan *nympha* and the putto rushing like a gust of wind, or like a wave, with their flowing ribbons and garlands that reference triumphal decora-tions waving in a make-believe wind, dramatise the outside bursting in, pushing hard upon the immobility of the inside; both hint at something that is not in the scene itself, that is extraneous — they are disturbances, agents of incongruity (narrative or structural) that speak of something outside the principal message of the artwork, be it painting or architec-ture, and that cut across it.

These putti turn up endlessly in Quattrocento architecture sculp-ture — most powerfully in Donatello's *cantoria* and his Prato pulpit (Fig-ure 15.8 and 15.9) with its layers of moving, writhing, squirming putti that suggest something barely hidden by the wall surface, that only needs a thin scalpel to open it out to reveal a teaming life and an unruly one in which proportion, rational arrangements and decorum do not exist and that literally inhabit the walls of architecture. Maso di Bartolomeo, who
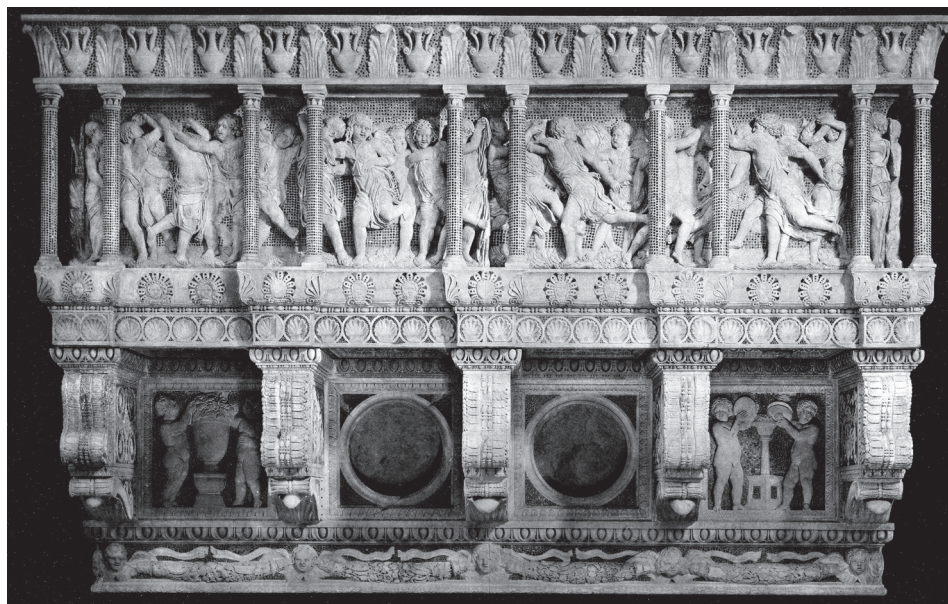
15.8   Donatello, Cantoria, 1439. From Stegmann and Geymüller, *Die Architektur der Renaissance in Toscana*, Munich 1885–1908.
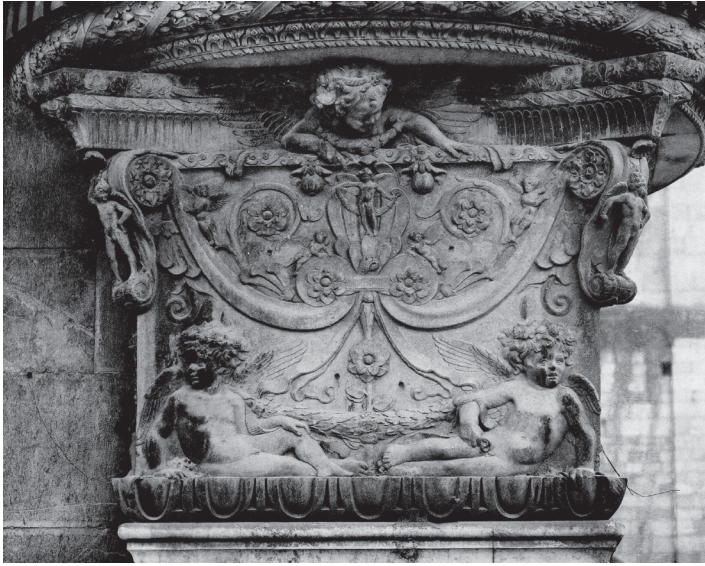
15.9 Donatello and Michelozzo, Bronze capital, Cathedral of S. Stefano, Prato. From Stegmann and Geymüller, *Die Architektur der Renaissance in Toscana*, Munich 1885–1908.

15.10 Nicola di Giovanni (da Firenze), Detail of Frieze, Chapel of the Blessed Giovanni Orsini, Trogir Cathedral (Croatia).

carved the reliquary for the Virgin's belt at Prato (and uses the same putti frieze motif for the miniature 'temple'/object) and worked with Donatello and Michelozzo, takes this motif into *sgraffito* on the Medici palace. Other Florentine palazzi from the period displayed similar motifs of playful putti whose function it clearly was to enliven architecture. Not all are as savage as Donatello's, though Donatello, of course, is not alone in exploring this 'meanadic' dimension. Agostino di Duccio (who had worked with Donatello and Michelozzo in Prato and who was a central figure for Warburg and to whom Panel 25 from the *Mnemosyne* is almost exclusively dedicated) lays out endless forms of putti side by side with nymphs/maenads in his Tempio Malatestiano chapels as well as at San Bernardino in Perugia. The same is true of Nicola di Giovanni's (da Firenze) 1468 chapel of the Blessed Giovanni Orsini in Trogir Cathedral in Croatia where a frieze of upright putti encircle the entire space at the springing of the barrel vault (Figure 15.10).

Here a new application of the motif brings it fully into architectural use. If Donatello used it on 'architectural furniture' such as cantorias and pulpits, that is, on stone objects that are an extension of the architecture and a form of *Kleinarchitektur*, the putti frieze as a fully architectural element is clearly evident in the work of the sculptor/architects of the generation following him. The architectural context where the motif turned up in antiquity is in such complexes as the Forum of Caesar, in the shape of a frieze with a clear iconographic function: the putti hold instruments and objects that refer to Caesar's triumphs. The architectural implications of body-friezes of which the putti 'ribbons' are one type, were inherent in Roman imperial art especially in triumphal arches—that most hybrid of all artistic genres—where life-sized friezes of human bodies were increasingly employed. The Arch of Benevento, the immediate model for the triumphal arch of Alfonso of Aragon in Naples, is one such example and its reception in the fifteenth century a clear statement of the attention these motifs elicited. As a podium frieze of cavorting *eroti* on land and in the sea on the arch of Alfonso—with no implication of portraiture or reference to historical events, but simply as a repetitive motif of adornment—the putti exist in a different figural domain than the full-sized bodies that make up the stone procession of figures 'accompanying' the royal procession as it enters the building (Figures 15.11 and 15.12).

A further extension of the putti frieze can be found in the Piccolomini chapel in Santa Anna dei Lombardi in Naples (by Antonio Rossellino and

15.11 Ornamental frieze to the base, Arch of Alfonso v of Aragon, Castelnuovo, Naples, 1470.

15.12 Ornamental frieze to the base, Arch of Alfonso v of Aragon, Castelnuovo, Naples, 1470.

Benedetto da Maiano?) (Figure 15.13). Though similar to the Chapel of the Cardinal of Portugal the putti here are not two figures framing a scene, but have increased in number and become a freestanding parapet of figures, transcending the medium of the relief and the frieze. Yet they remain ornamental 'Beiwerk', not actors, animated inclusions into an architectural ensemble, into a *Kleinarchitektur*. This is not just a fifteenth-century phenomenon though the links between Donatello, his followers and the Tuscan school of architects/sculptors at work throughout Italy do suggest a strategy with its origin in Florence. Yet it remains part of the vocabulary and it reappears in the putti girding the Capella Paolina in Santa Maria Maggiore on the eve of the seventeenth century (Figure 15.14).

These bands of putti applied to architecture—be it as friezes, as podia or as freestanding row of acroteria-like figures—seem a charming invention. Indeed, they occur in other media too—prints, tapestries, majolica ware—as a distinct invitation to blend learning and pleasure through viewing.[22] But in the medium of stone, despite the charm of the *angelotti* the darker side is only beneath the surface: in all instances the connection with death is strong for the motif is primarily drawn from sarcophagi

15.13   Antonio Rossellino and Benedetto da Maiano (?), Sculptural cornice,
Piccolomini Chapel, Santa Anna dei Lombardi, Naples.

15.14　Flaminio Ponzio and others, Sculptural decoration, Capella Paolina, Santa Maria Maggiore, Rome, 1608–15.

15.15　Detail of Roman sarcophagus, III c AD, Archaeological Museum of Konia (Turkey).

and occurs in funeral architecture. In the sarcophagi (especially the late antique ones) the link to sacrifice and animism is latent in the figure of the *eroti* traditionally adorning them like a wall of moving bodies. The association with Bacchic sacrifices is evident and intended to be clearly legible (Figure 15.15). And translations into Christian monuments were quite direct and continued to be made into the seventeenth century: the altar of St Saturnine in the Cathedral of Cagliari (in Sardegna) is a hybrid assemblage of the saint's bust and a second-century sarcophagus containing his relics behind a marble panel of *eroti* leading a sacrificial dance.

The same is true of Donatello's putti who carry a similar erotic and Bacchic charge. Donatello's singing angels as pagan putti both in his Florence *cantoria* and his Prato pulpit, display an abandon and playfulness that moves into mischievousness, and danger even, pulling at each other's hair, clothes and limbs (Figure 15.16). Unexpected and wild their gestures cross over from children's antics into those of their more frenzied ancient counterparts, of the *eroti* engaged in Bacchic rites and associated with death. Indeed, the source of the motif may well also hint at its function and the implications it carries. Like the *nymph/maenad* (and Warburg frequently finds orgiastic sources for the apparently tame attendants at births and marriages in Ghirlandaio and Botticelli canvases), the Renaissance putti

15.16   Donatello, Detail of Singing Angels, Cantoria, 1439.

also contain a Bacchic element fully exploited in the ancient sarcophagi. At Trogir and Rimini, at Cagliari and in Rome they are inserted in tomb/ funerary architecture.

Agents of movement, represented as bodies and not as abstract patterns, the rows of putti are ultimately a bizarre architectural ornament, and a potentially violent one that hints at forces that are not benign and *somehow* pertain to architecture — an unruly aliveness (or enlivenment), a potential cruelty (typical of children), loose, unbound by convention, acting out raw emotion and body movements. If there is a recollection of the embedded life inside the walls, then the putti 'manifest' it and invite a reciprocal motion (or enactment) around the building — not a direct frontal interaction but a dance around its perimeter. Perhaps the fact that Filarete, architect and sculptor, the maker of the bronze doors of St Peter's, signs his work with a representation of dance, a *ronde*, performed by himself and his *garzoni*, hints at a mirror image: the dance of the craftsmen as a border for the great doors breaks the boundaries between the ornamental device and its making. Is this also a statement about making as a vitalistic component of architecture? And further, is this unsuspected life within the thickness of the walls that invites its performance on the outside, within the well-bred environments of Madonnas and religious ritual, a memory of that demonic aspect embedded in archaic art that gets repeated endlessly, phobically, according to Warburg? Is this what Burckhardt intuits in his term 'lebendige Architektur' even as he contains it and circumscribes it with his Apollonian detachment? In short, is the putto *as ornament* the *Pathosformel* of architecture? Or in Gell's terms: is this decoration as an adhesive device (because of the repetition)? And to what end?

The Relief: A Difficult Genre

The questions the putti series raise add to that which Burckhardt's 'Lebendigkeit' poses: What is the function of the sculpted relief on architecture? This medium includes the series of repeatable forms like the putti that create ornamental bands or friezes inviting and suggesting motion, but also the narrative panels that are contained interruptions in the continuous surface of the wall and are teeming with life. Adding a narrative dimension to the building as an opportunity to view stone 'pictures' they also represent a means to create texture, effects of light and shadow, of depth that

animate the wall. In short, beyond 'text' they represent a means of contributing to a phenomenology of the architecture. No matter how specific the story represented the visual overall effect is that of organic animation of the wall surface.

The sculptural relief—both as panel and frieze—was a canonical part of the ancient temple and much of what was known of ancient art was received through the intermediary of carved surfaces in hard stone. Whether embedded on triumphal arches or temples, or at smaller scales, on tombs and on sarcophagi (which often contained significant elements of miniature architecture), or even smaller still, on cameos, the relief constituted the reference point for most Renaissance imagery (Figure 15.17). But despite its popularity and ubiquitous presence, as a medium the relief met with some resistance for it had no theory attached to it, it had no body of rules governing it, overshadowed as it was by painting on the one hand and by free-standing sculpture on the other. Alberti had already signalled the malaise when he used the Meleager sarcophagus relief as an example for painting in *De pictura* while in his *De statua* he focused exclusively on

15.17 Detail of reliefs, Arch of Septimius Severus, Rome.

sculpture in the round.[23] Relief did not fare better in *De re aedificatoria*. There he recommended stone, monochrome pictures for the decoration of church walls in lieu of the more attention-demanding paintings, but even so, set as he was to lay out the normative structure of architecture, he did not deal with the relief medium as such and identified no laws governing its deployment. As he presented it the relief functioned as an image and as such needed little specific elucidation.[24]

But seeing that much architectural relief was rows of putti, of garlands, of moving bodies, somewhat like a movie reel rather than a framed picture, not differentiated into a story or a narrative, the rules and conditions of its positioning, extent, scale and so forth, needed some formulation. Yet it received none. To be sure, within the classical architectural vocabulary the location of friezes are prescribed—as to size and profile. But not in terms of representation and how the mimetic component relates to the strictly architectural one. It was as if the medium was in a twilight zone—not only for Alberti, but few other later treatise-writers had anything to say on the subject, as if its image component had exhausted everything there was to be thought about it. If at all, they focused on the assemblage of carved profiles and criticised excessive pilings of carved festoons. Indeed, Sebastiano Serlio criticises the triumphal arches in this respect and notes the contemporary taste for flat profiles, while Michelangelo's pointed critique of carved details as unsuitable foils for figural sculpture in the round led Vasari to fire his crew of marble carvers brought down with him from Florence to work in the service of Pope Julius III.[25] It is a measure of this unspoken discomfort that Serlio, for example, strips all the triumphal arches he illustrates in his *Terzo Libro* on antiquities (1540) of their entire sculptural garb. Even Palladio when he turns to the triumphal arches in his drawings, seems more intent on revealing the underlying architectural structure and only hints at the richness of surface treatments. For him the overall and principal effect is that of a pierced cubic stone mass, not of a textured and carved urban sculpture.

The discomfort with the relief may be sensed in this avoidance to discuss it, and more directly in the contemporary ambiguous accolades from Vincenzo Borghini and Giorgio Vasari who stress its position at the intersection between the arts, belonging to all yet to none. Indeed, Borghini defines it as the 'dolce/amaro' or 'imperfetto' of art, while Vasari speaks of it as a hybrid.[26] Yet there is no such reluctance in its practical use. The ancient triumphal arches spectacularly covered in reliefs that ranged

from the most subtle to the most three-dimensional, offered examples of architectural-cum-sculptural extravaganzas which became models for wall treatments from the Naples of Alfonso d'Aragona to the Vicenza of Palladio. Yet in all instances of its use, the relief threatens architecture unless it is firmly held within a frame like so many stone pictures. The façades of the Villa Medici and Borghese in Rome make the point abundantly clear. The movement that invades architecture is a dimension that runs profoundly counter to its very basic nature and it must be controlled—where the Bacchic putti cavort along the friezes of palaces and tombs their movements are twinned, balanced across an axis and the flowing ribbons match each other on either side of a line of symmetry. No actual wind blows here as the ribbons are fluttering in opposing directions at once. Where the human and vegetal forms invade the building surface architecture is dissolved and it takes the overstated and almost excessively monumental grid of columns in Palladio's Palazzo del Capitaniato in Vicenza to hold in place an architecture that mutates before our very eyes (Figure 15.18).

15.18   Palladio, Detail of façade, Palazzo del Capitaniato, Vicenza, from 1570.

Despite the enthusiasm towards theory in the Renaissance, strangely enough the architectural relief remains theoretically orphaned and no reflection on its role in contributing to a humanised architecture occurs in any of the Renaissance authors. Indeed it remains under-theorised well into the nineteenth century, until Adolf von Hildebrandt's *Das Problem der Form* (1897) and his definition of sculpture as 'Belebung der Fläche' (animation of the surface).[27] Borghini's statement that absorbs the relief within representation but allows it to be architectural, indeed this art's only claim to *being an art at all*, is unique in the period to my knowledge. It links to Michelangelo's deeply held view that figures 'lived' within the marble blocks from which the sculptor released them, and from his approach to conceiving architectural members it would seem that he thought of columns and ribs in much the same way. The appearance of monolithic stone out of which finer elements are carved — or are discovered in it through the work of the chisel — was a trope that justified his efforts to obtain seamless joints in the travertine members used for the cupola of St Peter's just as it had led him to expose the inner workings of the wall in the Laurenziana *ricetto* by revealing columns embedded in it.

But if Renaissance authors, if not builders, were silent if not ambivalent about the genre, nineteenth-century art historians, starting with Burckhardt, were even more so. As it emerges from the extensive manuscripts he wrote on Renaissance sculpture and the relief in particular, for Burckhardt it was a genre that was itself slowly perverted by painting thus losing its sculptural identity in favour of pictorial effects and narrative. Of course, Burckhardt's bias was still very much the Winckelmannian one in its afterlife, that is, an aesthetic that took its cue from classical Greek art and insisted on media specificity: plastic devices and effects were expected only for sculpture, the figures were to retain their discreteness, their uninterrupted individual outlines like so many figures in the round and the tools of painting (perspective, recession, colour, *sfumato*, layering of figures, dramatic action of groups, etc.) were to remain in their own realm, of canvas and paints, of oils and flatness. For Burckhardt the relief is a dangerous site: it adds movement and enlivens architecture but threatens it as well and could potentially damage it.[28] Where Burckhardt was at his most explicit on this issue was in his response to the Pergamon marbles recently arrived in Berlin: here like his contemporaries he sensed an extreme condition at whose centre lay the relief problem. For when Burckhardt finally did acknowledge a liking for the Baroque (and he did so only

with respect to its architecture) it was because he had worked through the Pergamon altar. What he had called 'lebendige Architektur' and of which he regarded the Baroque as the climax, was ultimately epitomised by what this relief represented: extreme organic movement embedded in architecture. Not the undulation of walls and the implied movement of the mass itself, but the movement of the bodies within the relief, which obliterated and indeed replaced the architecture of the podium.

In the event it was not Burckhardt but Heinrich von Brunn, professor at Munich and Wölfflin's other beloved teacher, who crossed the t's and dotted the i's in a massive article of 1884.[29] For Brunn the bodies of the relief were not sculpture as such, nor painting—for the relief had been criticised for its *malerisch* qualities—but architectural. And it was an essential component of the architecture in that it constituted a textured mass that conveyed the forces at work within the structure. However, these were not the logical forces that unfolded from architectural member to architectural member, from entablature to column to base deforming them slightly in their passage within the traditional norms of the classical frame; instead, they were disorderly, dangerous, chaotic, fully figural rather than abstracted into an architectural form, representing a churning inside the construct that belied the austere elegance of the superimposed colonnade. It seemed as if the giants rising from the earth translated into architecture the threatening molten lava that lay precariously controlled beneath its thin crust. These were not the putti of the Quattrocento, but much in the same way, pointed at a liveliness outside of control, that threatened to dissolve the whole, that hinted at enlivenment run amok, when the boundaries between object and subject are stretched so thin that a collapse is felt to be imminent. And it may also have hinted at the need to push that boundary as far as it would go, at the need to create a deep correspondence between body and thing—to turn architecture into 'living presence'.

Living Stone

The inchoate forces that enliven architecture and belong to the earth found one other, and significant, form of expression. And that is in the material itself. This then is the third of the areas connecting architecture to 'living presence'. The stone of the ashlar facing, of the columns and ornaments, of the reliefs and friezes is 'living' or so it was conceived—'pietra

viva'. Fashioned from earth, water and fire, embedding in its own matter a microcosm of small beings caught in the solidification process, stone was understood to be a live material that connected architecture with the living earth. Most architects wrote on stones as part of their treatises and one can easily follow the thread from Alberti to Cataneo, from Vasari to Scamozzi, to critics like Baldinucci and beyond. For example, as they described it travertine was thought to be a 'congelazione' of earth and water with vegetation caught in the process and still visible inside the texture of bubbles and veins; amber marvelously caught ants and bees, spiders and crickets in its golden drops confirming its suspended aliveness; some white marbles (such as the 'white marble of Paris') and tufo were extremely soft materials when first quarried yet continued to solidify and become stronger and stronger with exposure to air, in a process of becoming that was still incomplete. As such stone — and the many varieties of marble in particular — records the aliveness of architecture in its purest form: here organic and inorganic meet and touch, the process of transition from one to the other is not yet complete and takes place literally before our eyes.

Renaissance authors relied especially on Giorgio Agricola (Georg Bauer) whose treatise on mining had had a significant impact on architects. Likewise, ancient authors like Pliny and Lucretius provided animistic tropes and information about stones that were much attended to.[30] But on this basis much was added from direct observation. As Scamozzi describes with evident relish, the veining of marbles was another source for registering the profound anthropomorphism of stone itself, not only its carved forms: marble veining resembled the veining of living wood, of walnut and olive he argues, that is of 'living' nature; and in it one could find 'marvelous portrait likenesses, and figures, and animals, and plants, and landscapes, and seas, as is the case in the marbles of Hagia Sofia in Constantinople, and in many similar ones in Rome, in Ravenna, and here in Venice, where one can see similar things, invented, however, by nature, without any human.'[31] It is these 'tavole' as he calls them, or book-matching of marble slabs as we might call them today, that added a living quality to buildings — like veins in the human body, slightly veiled and only guessed at through the skin, they pulsate with life's juices.[32] Embedded in walls and presented as large statements, these natural formations added a level of movement to inert architecture: the blurred quality of their outlines suggests vibrations, like chords that have been plucked, or ripples in the surface of water (Figure 15.19).

15.19 Marble Pillar with Book-matching, Church of San Vitale, Ravenna.

As is well known, under Francesco de Medici stones and chemistry became significant fascinations at the Florentine court and what is now the *Opificio delle pietre dure* found its origin in this concentrated attention paid to stones and their manufacture into marvels of paneling, objects, incrustations and jewellery. But if found or implied images were the object of the artisans producing these stone 'paintings', in architecture image becomes secondary. To be sure, images do occur and can be read, such as the marble wings hovering over the Madonna in Hagia Sofia or the veins encircling the columns at San Apollinare in Classe suggesting the Solomonic columns or the added vein marble behind the funerary portrait of Dante in Ravenna by Pietro Lombardo suggesting heavy brocade and lace. But they also suggest movement, fluttering and the pulse of a living organism. This is enlivenment that does not depend upon iconography—Bacchic or otherwise—but is already in the viscera of the material itself.[33] It is perhaps because he is conscious of this truly 'living presence' that Scamozzi can argue that the whole body can and should be engaged when selecting stone: stone, he maintains, can be known through touch, but also through hearing, through sight and taste, indeed all senses come into play and can do so because like speaks to like, organism to organism.[34]

Alberti's metaphor of the wall as living flesh, as containing bones and ligaments, chords and muscles, but also a soft centre may well hint in the same direction (*On the Art of Building* III, 12 and III, 14).[35] I do not want to overburden Alberti's imagery, but it may contain a reference to a need to read architecture as flesh and bones, as much closer to the human organism than the imitation of the body into the column permits — to see in architecture the repetition of the Master Manole myth — the living breath and living flesh, which, were one to slice the surface open with a scalpel, would burst out in all the messiness and disorderliness of intestines beneath the taught surface of the metal and leather *cuirasse* and the protective torso muscles in Valverde's *Anatomy* (Figure 15.20).

Conclusion

Architecture is not touched and kissed; it does not bleed nor does it follow you with its eyes. Direct mimetic links are tenuous and agency seems even

15.20 Anatomical illustration, Juan Hamusco de Valverde, *Anatomia*, 1606.

more so. But they are no less at work. Be it through representation—as in reliefs and putti friezes—that, as ornament, invite performance and record the memory of ancient building rites of trapped life within walls, or through the live stone itself, which, with its visible veins, suggests its participation in an organic world of which it is a trace. Within the classical vocabulary of Renaissance architecture phenomenology and agency meet: representation and matter absorbed within representation cause an enhancement of being and precipitate the memory, however distant, of an archaic conception of building that lives and cannot exist otherwise except through a close body/building relationship. To turn to Warburg once again, this form of visceral anthropomorphism could be construed as architecture's *Nachleben*. Intuited empathetically by the viewer, the link offers the possibility of a blurring of boundaries—a loss of self that may resonate with the initial sacrifice needed to erect a building, but that remains this side of danger in a world that—as Agamben argues—has lost the ability to contemplate beauty's abyss. Poised between charm and sacrifice the putti record this passing.

NOTES

1   This essay was developed from the keynote address I delivered at the conference 'The Secret Lives of Artworks', 24–26 June 2010 in Leiden. I wish to thank Caroline van Eck, Joris van Gastel and Elsje van Kessel for their kind invitation and for organising a very stimulating event. I am especially grateful to Maria Loh and David Kim for their insightful comments on the manuscript.

For an extensive account of this and related folk ballads about sacrificial rites related to building in the Balkans see Lazar Sainean, 'Les rites de la construction d'après la poésie populaire de l'Europe Orientale', *Revue de l'Histoire des Religions* 54 (1902): pp. 359–393. For a discussion of this myth with respect to gender issues see Manuela Antoniu, 'The Walled-Up Bride: An Architecture of Eternal Return', in Debra Coleman et al. (eds), *Architecture and Feminism* (Princeton, 1996), pp. 109–129. For an even broader geographical range of such myths of sacrifice see Paul Sartori, 'Über das Bauopfer', *Zeitschrift für Ethnologie* 30 (1898): pp. 1–54.

2   Mircea Eliade, 'Master Manole and the Monastery of Arges', in *Zalmoxis: The Vanishing God*, trans. Willard R. Trask (Chicago, 1972), pp. 164–190.

3   For a broadly anthropological reading of the columnar orders and their history see Joseph Rykwert, *The Dancing Column* (Cambridge, MA, 1996) and in particular chapter x.

4   A related and much more attended instance of body/artefact crossovers is offered by the myth of Pygmalion. Victor I. Stoichita, *The Pygmalion Effect* (Chicago, 2006).

5   Alfred Gell, *Art and Agency: An Anthropological Theory* (Oxford, 1998). On Warburg see Philip-Alain Michaud, *Aby Warburg et l'image en mouvement* (Paris, 1998); Aby Warburg,

The Renewal of Pagan Antiquity, introd. and ed. Kurt Forster (Santa Monica, 1999); Georges Didi-Huberman, *L'image survivante* (Paris, 2002); Aby Warburg, *La rinascita el paganesimo antico e altri scritti (1889–1914)*, ed. Maurizio Ghelardi (London and Turin, 2004).

6   On the gestural tectonics of Renaissance architecture see Alina Payne, '*Ut poesis architectura*: Tectonics and Poetics in Architectural Criticism c.1570', in Alina Payne et al. (eds), *Antiquity and Its Interpreters* (New York, 2000), pp. 143–156 and *The Architectural Treatise in the Renaissance* (New York, 1999), especially chapter 7. Even more specifically on the relation of sculpture (especially of bodies) and architecture in the work of Palladio see Alina Payne, 'Reclining Bodies: Figural Ornament in Renaissance Architecture', in Michael Cole (ed.), *Sixteenth-Century Italian Art* (Oxford, 2006), pp. 218–239.

7   Giorgio Agamben, *L'uomo senza contenuto* (Macerata, 1994), chapter 1.

8   Heinrich Wölfflin, 'Prologomena zu einer Psychologie der Architektur (1886)', in *Kleine Schriften*, ed. Joseph Gantner (Basel, 1946), p. 41. On the relationship between Wölfflin and Gottfried Semper—the originator of the so-called materialistic conception of art-making—as well as comprehensive bibliography on the subject see Alina Payne, *From Ornament to Object: Genealogies of Architectural Modernism* (New Haven, 2012), chapters 1 and 3.

9   Alina Payne, 'Portable Ruins: The Pergamon Altar, Heinrich Wölfflin and German Art History at the *Fin de siècle*', *Res* 54/55 (2008), pp. 168–189.

10 Gell, *Art and Agency*, p. 122.

11 In a letter of 5 April 1875 to Alioth. The passage continues: 'Er hat nicht nur Mittel für alles, was zum Zweck dient, sondern auch für den schönen Schein.' Jakob Burckhardt, *Briefe and einen Architekten 1870–1889* (Munich, 1913), p. 6. On Burckhardt's shifting views with respect to the baroque see Alina Payne, 'On Sculptural Relief: Malerisch, the Autonomy of Artistic Media and the Beginnings of Baroque Studies', in Helen Hills (ed.), *Rethinking the Baroque* (London, 2011), pp. 39–64.

12 In his notes and fragments of 1927. For the transcription of Warburg's notes related to the Rome conference I thank Maurizio Ghelardi who shared his manuscript notes for his forthcoming book *La lotta per lo stile* with me.

13 Warburg, notes and fragments of 1927.

14 On the relationship Burckhardt/Nietzsche see August Buck (ed.), *Renaissance und Renaissancismus von Jacob Burckhardt bis Thomas Mann* (Tübingen, 1990).

15 Ghelardi, *La lotta per lo stile.*

16 The fragment in which Warburg reflects on Nietzsche's reading of the art work and his limitations due to his ignorance of folklore and anthropology is dated 9 September 1905. This and related notes to Nietzsche are written by hand on his copy of the 1895 essay on the *Intermezzi.* Ghelardi, ms *La lotta per lo stile.*

17 As quoted in Michaud, *Aby Warburg*, pp. 264–265. My translation.

18 Gell cites sources from Lucretius (on emanations and simulacra) to the philosopher Yrjö Hirn. Gell, *Art and Agency*, pp. 104–106.

19 Gell, *Art and Agency*, pp. 73–95.

20 Payne, 'Reclining Bodies'.

21 The formulation appeared in his notes towards the never completed 'Grundlegende Bruchstücke zu einer pragmatischen Ausdruckskunde'. The note fragments are dated

April and June 1889. I thank Maurizio Ghelardi for sharing with me his transcription of the Warburg manuscripts.

22 See Alexandra M. Korey, *Putti Pleasure, and Pedagogy in Sixteenth-Century Italian Prints and Decorative Arts* (Diss., University of Chicago, 2007). On putti as *spiritelli* in Italian painting see Anthony Colantuono, 'Titian's Tender Infants: On the Imitation of Venetian Painting in Baroque Rome', *I Tatti Studies* 3 (1989): pp. 207–34 and Charles Dempsey, *Inventing the Renaissance Putto* (Chapel Hill, NC, 2001).

23 Leon Battista Alberti, *On Painting* (New Haven, 1966), p. 73.

24 See VII, 10 where Alberti recommends reliefs over paintings inside the church but treats them as interchangeable and VIII, 6 where he describes the triumphal arch but does not dwell on the relief except to define it as 'a carved *istoria*'. Leon Battista Alberti, *On the Art of Building in ten Books* (Cambridge, MA, 1988), pp. 220 and 268.

25 See for example Serlio's discussion of the 'confusion of members' on the Arch of Benevento and the Arch of Constantine respectively. Sebastiano Serlio, *Il terzo libro di Sebastiano Serlio Bolognese* (Venice, 1540), pp. 104v and 106v. For Michelangelo's critical comments on carved versus plain mouldings, and preference for the latter, see Vasari's account of the work of sculptor Simone Mosca: 'se bene aricchiscono l'opere, confondono le figure, la dove il lavoro di quadro, quando e fatto bene, e molto piu bello che l'intaglio e meglio accompagna le statue.' Giorgio Vasari, *Le Vite de' più eccellenti pittori scultori e architettori,* ed. Rosanna Bettarini and Paola Barocchi (Florence, 1967; 1st edn Giunti, Florence, 1568), vol. 5, p. 344.

26 For Borghini see Benedetto Varchi and Vincenzo Borghini, *Pittura e Scultura nel Cinquecento*, ed. Paola Barocchi (Livorno, 1998), p. 128–129; Vasari, *Le Vite*, p. 48.

27 The relief was central to Riegl's development of his *Kunstwollen* theory in *Spätrömische Kunstindustrie* (1901). However, I do not turn to Riegl in this essay since he is not concerned with sculptural reliefs deployed on architecture, but with the appearance of architectural massing (depth, light and shadow, 'Kolorismus' etc.), that is, with the appearance of architecture as relief. Moreover, his view—that a relief aesthetically united all artistic production in late antiquity—is historically contingent (characteristic of one particular style), not pertaining to architecture in general terms.

28 For Burckhardt's statement on the decadence of the relief see his 'Randglossen zur Skulptur der Renaissance'; he returned to the subject at least three times in his 'Einwirkung des antiken Reliefs', 'Übersicht der Reliefkunst' and 'Das Relief im 16 Jahrhunderts'. Jacob Burckhardt, *Werke*, vol. 16. *Die Kunst der Renaissance,* ed. Maurizio Ghelardi, Susanne Müller and Max Seidel (Munich, 2006), vol. 1 and 16. See also Alina Payne, 'On Sculptural Relief'.

29 Heinrich von Brunn, 'Über die kunstgeschichtliche Stellung der Pergamenischen Gigantomachie', *Jahrbuch der königlichen preussischen Kunstsammlungen* 5 (1884): pp. 231–292.

30 Georg Agricola (Bauer), *De re metallica* (Leipzig, 1546).

31 Scamozzi dedicates Book VII to materials. Vincenzo Scamozzi, *L'idea dell'architettura universale* (Venice, 1615), vol. 2, p. 185.

32 Scamozzi, *L'idea dell'architettura universale,* p. 187.

33 The discussion of materials as living agents has been brilliantly proposed for sculpture in Michael Cole, 'Cellini's Blood', *Art Bulletin* 84/4 (2002): pp. 621–640 and in Michael Cole,

Cellini and the Principles of Sculpture (New York, 2002).

34 'Non e dubio alcuno, che per la cognitione delle pietre, e molto meglio a saper la natura di esse in genere, non che sia possibile saperlo di specie in specie; perche sarebbono come individui, de' quale il sito, le positure, & anco le proprie falde tra esse sono molto differenti; *ne si puo far certo giudicio di esse se non toccandole col scalpello.* Le pietre si possono conoscere sensatamente, perche quando sono piu forti, e dure si *vede* parimente, c'hanno del lustro, & alcune scintille salinge: *all'orecchio* un sono pieno, e sonoro; e specialmente ne'pezzi grandi: *al odore* rendono non so che di solfo, o corneo, massime quando si battono co'marrtelli da'denti, overo che si raschiano col'taglio de'ferri: *al gusto* manca qualita, e sapore delle altre; come quelle c'hanno piu dell'humido, che del terreo, e finamente al tatto elle sono piu gravi, e pesanti dale altre. Ancora *con l'Aiito* si consocono quelle pietre, che sono piu dure, e dense delle altre.' Scamozzi, *L'idea dell'architettura universale*, pp. 194–195.

35 Alberti, *On the Art of Building*, p. 79 and 85.