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*The art of travel in the name of science:
Mobility and erasure in the art of Flinders's Australian voyage, 1801-03*

Sarah Thomas

At the dawn of the nineteenth century the mapping of Australia, or New Holland as it was still known, remained incomplete. It was still far from certain as to whether the British colony of New South Wales was indeed part of the same unclaimed southern landmass that the Dutch had already charted. This gap in the map on the continent's southern coast—present day South Australia—prompted the Admiralty in 1801 to dispatch a young but experienced naval officer, Lieutenant Matthew Flinders RN, to complete his exploration of New Holland, and to '[examine] the natural productions of the island'¹, much of which remained unknown to European science. What served as the catalyst to this now famous voyage—the first to circumnavigate the continent—was the known fact that the French had already dispatched a rival voyage several months earlier, led by Nicolas Baudin, raising British suspicions that they were seeking potential sites for a base, or even spying on the young British colony. Flinders duly set out from Portsmouth on 18 July in his ship HMS *Investigator*, accompanied by his crew and a scientific team selected by the President of the Royal Society, Sir Joseph Banks (1743-1820): naturalist Robert Brown (1773-1858); Peter Good (d. 1803) gardener; a miner John Allen (b. 1775); an astronomer John Crosley (1762-1817); and two artists, William Westall (1781-1850) and Ferdinand Bauer (1760-1826).

As Flinders proceeded to map the Australian coastline, the two artists on board were occupied sketching. Empirical observation was key: as the topographical draughtsman Westall worked on deck with Flinders, recording the delicate form of the coastline as instructed, the natural history painter Bauer was for much of the time holed up in his cabin drawing the plant and animal specimens that he and Brown had been busy collecting. When the captain gave instruction for the ship to berth, the scientific team were provided with welcome opportunities to botanise and explore the geology of particular coastal regions in greater detail. Yet the surveying and cartographic priorities of Flinders, which demanded hasty passage given the intense political rivalry between the two competing nations during a time of war, were frequently at odds with those of the 'scientific gentlemen' on board. Flinders's navigational objectives ultimately took

priority over those of natural history: ‘The circumstances connected with navigation’, wrote one commentator, ‘and the great object of nautical and geographical discovery must often counteract the possibility of complete investigation of natural rarities ...’² The latter was equally painstaking, yet it required protracted periods of time on land to conduct field observations and collect specimens (both dead and alive). When the scientists were able to disembark, the meticulous, sometimes laborious, process of collecting specimens required frequent periods of stasis. Henry de Freycinet, Lieutenant on Baudin’s voyage, famously said later to Flinders: ‘if we had not been kept so long picking up shells and catching butterflies at Van Diemen’s Land, you would not have discovered the South Coast before us’.³

In his initial instructions for the voyage, Banks recommended that the ship’s tender be used frequently, ‘in order to Favor science ... & at the same time to Render the survey more than usualy [sic] accurate ... This will give the naturalists time to Range about & Collect the Produce of the earth, and also *allow the Painters Quiet & Repose*, even for finishing a certain Quantity of their works on the Spot where they have been began.’⁴ By the completion of the voyage, Banks acknowledged the very real tensions between the landings required by the naturalists, and the mobility needed to complete the survey. In a letter to Brown dated April 1803, he commended Flinders for the sacrifices he had made in this regard:

Your Commander deserves, in my opinion, great credit from the Public for *the pains he must have taken* to give you a variety of opportunities of Landing & Botanising. Had Cooke [sic] paid the same attention to the Naturalists as *he* seems to have done, we should have done much more at that time ... Capt. Flinders will meet with thanks & praise for every *sacrifice* he makes to the improvement of natural knowledge ...⁵

On the subject of the rival French voyage, Banks noted: ‘They do not ... appear likely to prove formidable rivals to you as Investigators. They seem too much afraid of the Land.’⁶ In short, it was the exigencies of imperial politics—here a maritime race between rival nations to complete a cartographic project—that saw mobility pitted against the stasis required of scientific observation.

Mobility was clearly at the heart of this scientific endeavour, yet it was utterly at odds not only with the practicalities of producing drawings under such trying circumstances, but more significantly, with the scientific demands made of the voyager artist: namely, precision and immutability. As Paul Smethurst has pointed out: ‘Mobility is in conflict with imperialism’s paradigms of order and control, and yet disorderly mobility is inherent in the idea of travel. It is essential to the traveller’s encounters with difference, with serendipity, and with motion in a psychological and ontological sense.’⁷ The pervasive tensions between the paradigm of a staid imperial order—political stability, pre-ordained social and racial hierarchies, ‘on-the-spot’ observational authority—and the profoundly disorienting experiences of travel, produced new scientific and artistic approaches to the production of imperial knowledge.

Mobility had been equated with the pursuit of knowledge at least since the Renaissance: travellers had long learned to impose familiar order onto ‘exotic disorder’.⁸ Yet it was a great challenge to the artists on board *Investigator*, forcing them to devise an array of ingenious visual and material strategies that invested their drawings with epistemological authority. We shall see that while Westall’s coastal profiles and landscape sketches played a notable contribution to completing and authenticating Flinders’s cartographic project for the British Admiralty, Bauer’s encrypted sketches assisted in the equally totalising project of Linnaean classification. During and following the voyage an enormous number of pencil sketches, and subsequent watercolours, prints and oil paintings were produced to assist with the mapping and classifying missions of the voyage.

The drawings of Westall and Bauer are shown here to function as Bruno Latour’s ‘immutable mobiles’, in which the stability, mobility and combinability of material gathered and inscribed ‘in the field’ are significant.⁹ Latour argues that it is the aggregation of such materials—their collectability, combinability, stability and mobility—that allowed ‘a centre to dominate faraway lands’.¹⁰ Mobility was key: ‘... the history of science’, he wrote, is in large part the history of the mobilisation of anything that can be made to move and shipped back home for this universal census.¹¹ It is the ‘shipping back home’ aspect of mobility—the double movement of going *there* and coming *back*—that is particularly significant for the history of science, and that shall concern us in this chapter.¹² Ultimately, we shall see that it was the drawing’s

superb facility for reproduction, as well as its popular appeal to a wide audience, that ensured that of all the data collected and recorded by Flinders and his team, the graven image was disseminated most widely.

Drawing was recognised by the scientific establishment as an integral part of a much wider range of literary and graphic notations. Flinders's 1801-3 voyage alone resulted in an enormous quantity of detailed, coded observations of the natural world, unrivalled in the period: these included maps, charts, logbooks, diaries and other private journals, survey sheets, a 'bearing book', pencil sketches, watercolours, and subsequently oil paintings, engravings and illustrated books. Data was collected on a great range of nautical and geographical matters—tides, atmospheric pressure, ocean temperatures, meteorology, latitude and longitude—as well as detailed observations of local geology, flora, fauna and ethnography. Not only was there much continuity between these different textual and visual forms,¹³ even more significant was the fact that each type of notation could be systematically cross-referenced with others, a process that served both to develop and legitimise European scientific knowledge. The drawings of Bauer and Westall participated in this process.

Bernard Smith has argued that a new respect for drawing emerged in the eighteenth century, derived in part from the growing appreciation of the medium in its own right, but also due to its new status as the supreme medium for documenting the world.¹⁴ Following the Cook voyages in particular, observational drawing was valued for its unique contribution to the production of knowledge, and Banks was keen to ensure that artists be employed on voyages of exploration as a matter of course. In this sense he played an important role in bringing together various professional skills, and he was highly directive in terms of how individual collections were deployed. Prior to the *Investigator*'s voyage he had invited his chosen scientists and painters to his house at 32 Soho Square, London, and instructed them on how their individual findings might be utilised, both during the voyage and afterwards. While Banks directed the astronomer to make his data available to the ship's captain for the purposes of navigation during the voyage, Brown and the artists:

have no instructions to communicate [to Flinders], for as it cannot be determined till the ship returns home what part of their works ought to be

inserted in the general narrative, it would be to occupy their time, which will be well fill'd up, in an useless manner if they were called upon to transcribe or otherwise employ themselves than in marking original observations and drawings.¹⁵

Thus while image and text were designed ultimately to be aggregated in modular fashion, Banks was concerned that the scientific crew not waste their time creating copies of their sketches for Flinders during the voyage.

Voyager artists were expected to work both quickly and accurately, adhering to a combination of scientific and aesthetic conventions. Their work raises well-rehearsed epistemological questions not only about the role of image-making in the larger production and circulation of imperial knowledge, but also about the capacity of images to document and convey scientific 'truth'.¹⁶ Westall and Bauer were carefully selected for Flinders' voyage for their specialised training and distinct skills.¹⁷ The topographical draughtsman did not have the botanical or zoological knowledge required of a natural history artist: he had been trained in the then still lowly art of landscape painting as a probationer at the Royal Academy Schools. Conversely, Bauer had little experience of conveying the vista, but had been trained in botanical drawing in his native Austria. While Westall's forte was the long-distance view, Bauer's was the microscopic detail. Both were equally integral to the scientific mission of the voyage, yet we shall see that in each case the mobility of the enterprise was fundamentally at odds with the scientific demands of drawing. As a consequence, both artists developed distinctive strategies that effectively effaced all traces of mobility. The art of empirical observation, with its emphasis on clarity and detail, demanded stasis and poise: this was no place for blurred vision.

Bauer worked closely with the naturalist Brown. Over the course of the voyage he amassed a huge collection, of over 3000 plants and hundreds of animals, many of which he carefully prepared for the long and hazardous return journey to England. On numerous occasions when the ship anchored, Bauer joined Brown and the other scientific gentlemen in rowing ashore for the purpose of botanising, sometimes covering a great deal of rugged terrain and often in searing heat. Plant specimens were collected, and seeds for planting in the portable greenhouse that would be erected on board the ship: living plants retained their colour and form in ways that dried specimens

could not. Speed was of the essence. Animal specimens were shot and brought on board for the artist to sketch, their bodies then prepared for the long journey home, destined for further study and deposition in the museum.¹⁸ Bauer shot birds, including a rainbow lorikeet, the subject of one of his most striking finished watercolours.¹⁹ **[Plate 1.]** The mobile subject presented obvious challenges to the natural history artist, and it would not be until advances in serial photography, particularly the pioneering work of Edward Muybridge in the late 1870s, that images were able to capture animals in motion with any real success.

While Bauer was involved in collecting specimens, for much of the time he remained in his cabin, his pencil darting over paper with great precision.²⁰ He worked indefatigably, keenly aware of the enormity of the project and his significant role within it. Natural history specimens are inherently unstable, susceptible to shrinking and deterioration almost as soon as they are collected. Writing to Banks in 1803, Bauer said: ‘... I resolved that in such an expedition it will be the best by every opportunitie [*sic*] to preserve as many subjects of Natural history in sketches as shall be in my power to execute, for fear to loss [*sic*] some which might be new or rare before they are ascertained [*sic*].’²¹ Time was the obstacle: even when Bauer’s specimens had been immobilised by being shot, or plucked from the soil, they continued to mutate. The sketch purported to eliminate the effects of time, visualising natural history in an apparently immutable form, despite the obstacles as we shall soon see.

While Bauer’s pencil captured the form of hundreds of species then unknown to European science, it was the fidelity of colour that most preoccupied him. The influential taxonomist Carl Linnaeus had advised in the mid-eighteenth century that in classifying plants: ‘Colour is remarkably changeable, and so is of no value in definitions.’²² Rather, it was the number, shape, position and proportion of a plant’s organs that were most reliable indicators, as ‘[they] are constant everywhere, in the plant, in the herbarium, in an illustration.’²³ Bauer was a keen participant in the Linnaean project and closely heeded his mentor’s advice, providing magnified details of the flower and its constituent parts, artfully arranged, usually towards the bottom of his pencil sketches and finished watercolours.²⁴ **[Plate 2.]** Yet where he deviated from Linnaeus’s instruction was in his ingenious solution to the problem of colour’s mutability, expanding a system of colour coding devised earlier in his career. Bauer’s

strategy for mitigating the disadvantages of mobility was to encrypt his pencil sketches in a skein of minute numbers that, by the time of Flinders's voyage, correlated to almost one thousand different shades on a chart.²⁵

Fixing the colour of a specimen before it faded was the bane of all natural history artists of the period, and the problem was only intensified by their distance from home, as well the searing heat of an Australian summer. Colour charts can be dated to as far back as Albrecht Dürer in the sixteenth century, and by the end of the eighteenth century several such charts had been published in Bauer's native Vienna.²⁶ While the actual chart, if it ever existed, has been lost, we know from the annotated pencil sketches and their corresponding watercolours (literally coloured 'by number'), that Bauer's code was unrivalled in its scope and sheer quantity of shades. Walter Lack exemplifies his obsession with accurate colour recording by pointing to his sketch of a white-bellied sea eagle, whose iris alone was inscribed with no less than five numbers [**Plate 3.**].²⁷ The system allowed Bauer to work primarily in pencil over the course of the one-and-a-half year voyage, and on return he spent the following thirteen years working up his sketches into finished watercolours and engravings for publication. Banks later said that the sketches were 'prepared in such a manner by reference to a table of colours as to enable him [Bauer] to finish them at his leisure with *perfect accuracy*'.²⁸

In addition to being a rapid and reliable method of recording colour (speed and precision were required in equal measure), Bauer's chart also had the advantage of freeing him from the less stable properties of watercolour whilst on the voyage: pencil was a more water resistant medium than watercolour, and a real advantage when humidity and water damage were constant threats to ship-borne artists, and the spectre of shipwreck hovered.²⁹ Damp conditions on board the leaky *Investigator* prompted him to complain in a letter to his brother: 'The paper which I took with me on this cruise has gone mouldy because of the dampness and warmth of the cabin and is covered with spots of mould and can no longer be painted on or used for any kind of painting.'³⁰ The stability of the colour chart system helped Bauer to overcome the great disadvantages of mobility in the imperial age – the tyranny of distance, and its corollary, an urgent lack of time.

On its eventual return to Britain in October 1805, after extensive refurbishment and without its captain, the *Investigator* was carrying thirty-eight cases of natural history specimens and drawings.³¹ Bauer had completed 2,073 sketches on the Australian voyage, most of them life-size, and he was anxious to start working them up into finished watercolour drawings. When Banks arranged for the Admiralty to pay his post-voyage salary, the drawings were transferred from Bauer's possession to Banks's house, and he was set to work. The reunification of the drawings with Brown's specimens had the key advantage of allowing both men to continue cross referencing their collections. Between 1806 and 1819 Bauer worked tirelessly on his elaborate watercolours, taking up to a week to complete each one, according to instructions from the Admiralty, and with careful reference to the preparatory drawings encrypted with minute numbers.³² In addition to his colour chart, he also consulted some of the Antipodean plants that by then were growing at Kew, and specimens kept in the herbaria of both Brown and Banks.³³

In certain cases where the specimens themselves had been lost or damaged Bauer's drawings took on particular scientific significance, formally authorised as 'types', and used as the basis for the first published description and naming of the species in question. This is the case, for example, of Bauer's watercolour of Brown's leatherjacket, *Acanthaluteres brownii* [Plate 4.], from which Scottish naturalist Sir John Richardson subsequently named and described the species for the purpose of classification.³⁴ This circumstance raises a multitude of questions regarding the nature of 'evidence' in the quest for scientific 'truth', and the relationship between the real and the copy. Yet more relevant here is what it reminds us about the relationship of mobile images to the production of imperial knowledge. The sketch on paper had several advantages to the specimen. First, as we have seen, it was inherently more stable: Bauer was keenly aware of his role in the production of stable records. Time was of the essence, as he sat sketching specimens in his cabin week after week with speed and accuracy, covering his pencil forms in numbers that would later unlock a world in colour. Sketches also occupied less precious storage space on board the ship than their referents, and were thus an ideal form of mobile knowledge.

But what ultimately gave drawings their best advantage over specimens, in terms of the dissemination of scientific knowledge, was their supreme suitability for reproduction:

first as we have seen in watercolour form, but subsequently as engravings that circulated around the globe in illustrated books, and often as individual plates. In the case of Bauer, ten of his botanical drawings were engraved by other artists and included in the Atlas which accompanied Flinders's formal account of the voyage, *A Voyage to Terra Australis* (1814). Fifteen of his plates (seventeen drawings) were also published in his sole publication, *Illustrationes florae Novae Hollandiae* (1813–16), for which he engraved the copper plates himself. Like the publications that had resulted from Cook's voyages a few decades earlier, *A Voyage to Terra Australis* was widely disseminated, infiltrating popular consciousness well beyond the highest echelons of the British scientific community: its geographic and scientific influence across Europe was also considerable (Flinders's *General Chart of Terra Australis or Australia*, for example, would stay in widespread use until the early twentieth century).

Bauer's method of preserving the stability of his plant and animal specimens was ingenious. By recording them quickly in two dimensions, following Linnaean taxonomic conventions, in coded monochrome that would later materialise into a thousand consistent colours, he effectively mitigated the disadvantages of the floating studio, always on the move. A master of both line and colour, Bauer set about reproducing the elements of Australia's natural world that could then in turn be reproduced as engravings and mobilised across Europe and beyond.

While birds, animals, rocks, human remains and effects, were all avidly collected by such scientific voyages, the land itself could not be, and for it to become mobile in any sense it needed to be coded and drawn.³⁵ The map and the coastal profile were two key tools for the visualisation and consolidation of imperial power, functioning as Latourian 'immutable mobiles'. The young Westall lacked the extraordinary drive of the much older artist Bauer.³⁶ Nevertheless, the topographical artist produced over 120 detailed landscape sketches during excursions ashore, plus numerous coastal profiles. Westall worked under Flinders's direct command, available to sketch a particular view when requested, the sketches thus giving visual form to the captain's painstaking survey as recorded in the voyage's logbook.³⁷ Flinders noted prominent points such as headlands (on one occasion the captain referred to 'Westall's headlands'³⁸), approaches to inlets and other navigational features: he gave the draughtsman the bearings and instructed him to note the time at which the view was 'taken'. In this way the artist carefully fixed

his graphic notations in time and space, creating modular blocks of empirical ‘evidence’ that could serve to substantiate other forms of visual and textual data. Unlike Bauer, who was able to consult specimens once back in London (growing in Kew Gardens for example, or preserved and collected), Westall had no recourse to other visual sources when working up his sketches into oil paintings (photography would not be invented for another four decades).

Westall’s drawing instruction at the Royal Academy Schools had included classes on linear perspective, chiaroscuro, and other European pictorial conventions: these played an important role in regulating the production of knowledge. It was common for naval officers to have studied the art of marine sketching to record coastlines, harbours and fortifications as quickly and accurately as possible: many were educated in the Mathematical School at Christ’s Hospital in the arts of navigation.³⁹ Westall, on the other hand, aspired to becoming a fine artist in the footsteps of his Royal Academician half-brother Richard, from whom he had originally learned to draw. When he was appointed a probationer at the Academy Schools just before he was invited to participate in the voyage, the history painter Henry Fuseli was Professor of Painting. Echoing the disquisitions of the Academy’s first President Sir Joshua Reynolds, Fuseli looked down upon the topographical artist, whose ‘tame delineation of a given spot’ he deemed unworthy of the creative artist.⁴⁰ Westall’s well-known disappointment in the ‘barren’ coastlines of Australia no doubt reflected some of the frustrations he felt not only about the difficult conditions and tedium endured on such a long voyage of exploration, but also about his artistic aspirations: isolated at sea, as far away as it was possible to get from London’s prestigious art world, and working in the service of empire for a master navigator, and with little artistic autonomy, the young Westall found it impossible at times to hide his despair.⁴¹

His training in linear perspective was significant because, as Latour reminds us, optical consistency was a key determinant of science.⁴² The homogenisation of graphic representation following the introduction of perspective during the Renaissance, he argued, made it possible for graphic images to be recognised immediately as representations of real space. Regardless of how far away the object lies, and from what angle it is viewed, perspective allows for its visual transcription: such drawn objects are immutable. Perspective also facilitated a new ‘set of movements’: ‘you can go out

of your way and come back with all the places you passed; these are all written in the same homogenous language (longitude and latitude, geometry) that allows you to change scale, to make them presentable, and to combine them at will.’⁴³

Westall’s coastal profiles were an integral part of Flinders’s running surveys, a series of observations made as the ship sailed, during the process of charting unknown coastal expanses: for this purpose he needed to sail as closely as possible to the shore (‘so closely’, he wrote, ‘that the washing of the surf upon it should be visible, and no opening, or anything of interest, escape notice’).⁴⁴ The coastal profile was a standard navigational practice employed by seamen in the period, and had its roots in fifteenth century Flanders.⁴⁵ The shape, size and colour of the coastline were of vital significance: in the words of Alexander Dalrymple, the Admiralty’s first official hydrographer, ‘It is obvious no Plan can be well constructed without having a View of the Land, at least in the mind’s eye: and therefore much better to have it recorded, and *always present to refer to.*’⁴⁶ Here the combinability and commensurability of notational forms is again in evidence, as Dalrymple exhorts the seaman to keep his drawing as a stable point of reference, an immutable mobile.

The most careful attention was paid to the uncharted southern coast, and fourteen individual profiles of this coastline were selected to be published across a double page in the Atlas of the *Voyage* (plate XVII) [**Plate 5.**]. Like much of the imagery produced by both artists on *Investigator*, there were various iterations of these, as Westall developed methods of adapting to the challenges of recording the natural world from a floating vessel. Like Bauer, Westall too first deployed his pencil to capture the segment of coastline most rapidly [**Plate 6.**], darting across the paper with a flurry of lines and dots, and with Flinders’s guidance noting bearings and place names, and always including the date and time at which the ‘snapshot’ was ‘taken’.

Westall most likely developed these drawings into more finished watercolours on board *Investigator*, not using Bauer’s colour-by-number system, but rather following standard navigational practice of the day—by recalling colours from memory as soon as possible after the initial drawings had been made. [**Plate 7.**] While colour was a vital marker of difference for Bauer in his classification project, it held less of interest to the navigator, for whom line was a much more powerful tool. It would be many years later that a

selection of these watercolours was engraved for the *Voyage*, and reduced again to a series of monochromatic lines.

While Westall's role in the Flinders's surveying project demanded specificity of place (in the form of place names and geographical co-ordinates), it is worth mentioning that Bauer was much less concerned with recording the exact locations where his specimens had been discovered. While in many cases we can ascertain this by cross-referencing with Brown's diary entries and other written records, there are many gaps in our knowledge.⁴⁷ However on some occasions, Bauer was careful to inscribe both dates and place names (such as 'Sydney / March 3 1804'), or very occasionally, the location of anchorages (as indicated by Roman numerals).⁴⁸ This is the case, for example, in Bauer's extraordinary drawing of a blue swimmer crab **[Plate 8]**, which bears the inscription 'South Coast XIII', thus locating its origins as St Vincent's Gulf (where the city of Adelaide now stands). That geographic bearings were less significant to Bauer than classifying the specimen according to Linnaean principles is perhaps little surprise, and reminds us that each artist was involved in a distinct scientific project.

While the coastal profile thus provided data for Flinders's running surveys, the panoramic views made from high points of land were an important component of his triangulation surveys, in which bearings of prominent points were noted at regular intervals, recorded on the ship's track and then drawn as triangles which allowed distance and position to be calculated, and thus the shape of the coastline.⁴⁹ Strategic subjects included prominent coastal headlands, or approaches to an inlet: as the artist sketched, Flinders conveyed the bearing of the headlands and identified key features.⁵⁰

A major early site was Princess Royal Harbour in King George Sound (Western Australia), into which Flinders sailed *Investigator* on 12 December 1801, anchoring until 3 January 1802 while the ship's rigging was refitted. As Flinders occupied himself preparing a new chart of the Sound and its two harbours, Westall was busy climbing the highest points for the best vantage points from which to sketch his panoramic views. *King George's Sound: View from the North-West* (1801) **[Plate 9]** is one of several pencil and wash drawings made in this period, showing the layout of the headlands (Point Possession, Bald Head, Peak Head [?]) and several islands (Seal, Mistaken and Break-sea), all carefully coded with a key.⁵¹ Here Westall clearly enjoys a little more

artistic license, drawing on the skills of *chiaroscuro*, linear perspective, and an economy of line learned from his older brother, as well as his brief time as probationer at the Royal Academy. He seems to delight here in the business of creating a picture, his pencil delicately flitting across the page, conveying as much about the local vegetation (with which he fills over half the sheet, perhaps inspired by his contact with Bauer and Brown), as he does about the shape of the coastline. *Investigator* is shown to the left of the mid-ground, with the suggestion of the three boats within which Flinders and his scientific team had disembarked. The sense of ‘on-the-spot’ authority and ‘Picturesque’ interest is reinforced too in the right foreground in which can clearly be seen two muskets (perhaps it was one of these used only a year later to kill an Aboriginal man at Blue Mud Bay in the Gulf of Carpentaria, in retaliation for the spearing of *Investigator*’s master’s mate), a billy can for boiling water, and a folder to protect the artist’s precious drawings.

The rules of perspective thus served a regime of Truth, promoting what Barthes later called the ‘reality effect’.⁵² Crucially, they demanded a static subject, the observing ‘eye’ of the artist. Yet in the case of Westall’s coastal profiles, drawn from direct observation through a telescope from the deck and on some occasions from the small rowing boat in which the scientific team came ashore, at least a degree of fiction was employed given the fact that the majority of his coastal sketches were made when the ship was underway: like Bauer, Westall too carefully effaced all signs of mobility from his sketches.⁵³ Several were made from an anchorage in locations which were being explored and charted, including Spencer Gulf, Port Bowen and King George’s Sound, and others were executed whilst the ship was anchored (including during the passage through Torres Strait). However, these represent only a small number of Westall’s total output: most were made whilst the ship was mobile, as part of Flinders’s ongoing running survey.⁵⁴

A stationary observation point was the ideal, as a widely read navigational manual of the late eighteenth century pointed out:

Having brought the ship to a convenient place, from which the principal points of the coast, or bay, may be seen, either cast anchor if it is convenient, or *lie to* as steady as possible; or if the coast is too shoal,

let the observations and measures be done in a boat. Then while the vessel is stationary in that situation, take the bearings in degrees of such points of the coast, as form the most material projections, or hollows with the azimuth compass; write down these bearings, and make a rough sketch of the appearance of the coast, observing carefully to mark the points of the bearings of which had been taken, with letters, for the sake of reference.⁵⁵

Yet there were many instances in which the exigencies of war and rivalries between empires meant that Flinders was forced by the constraints of time to modify accepted practices during the voyage, forced to make expedient decisions, aware that time was of the essence.⁵⁶ Westall on board the floating vessel was an observer in transit. Yet his coastal profiles' deceptive appearance of absolute clarity, stasis, and precision served to enhance their epistemological value: by deploying the conventions of perspective and chiaroscuro, the artist created a series of immutable objects. Furthermore, the method of inscribing the drawings with precise spatial and temporal co-ordinates also allowed for the cross-referencing of this visual information with a myriad of other forms of textual and diagrammatic data, including logbooks, charts, maps, diaries, and Flinders's 'bearing book'. Standard navigational practice ensured that the coastal profile was also modified by expanding the vertical scale of the coastline by one and a half to two times.⁵⁷

The fiction of a stable observer—the eye of linear perspective—is even more striking when we come to consider Westall's oil paintings and engravings commissioned by Banks over six years after the voyage, on the artist's return to London. Adhering to standard artistic practice, the oils were composites adapted and idealised from several of the artist's own sketches. This tradition relied inherently on the mobility of the artist—the roving visual 'reporter'—despite all traces of such mobility having been carefully erased. The multiple vantage points implicit in such aggregations were carefully merged into a seamless painted illusion, suggesting—erroneously—that the artist had stood motionless in order to record the scene laid out ahead of, or around, him. The fiction of immobility played a dual role in providing both a plausible view for curious metropolitan audiences, and one that adhered to the Classical precepts of landscape painting as laid out by Claude Lorrain and his contemporaries over a century

earlier. That is, the painting was both convincing as a record of place, and aesthetically pleasing to the cultivated viewer – to use the parlance of the day, here was pictorial ‘beauty’ and ‘truth’ combined.

It is in Westall’s oil paintings that we come closest to being able to discern what we might call the *effects* of mobility. In fact if we were to see these paintings not simply as composites of individual views witnessed earlier ‘on the spot’, but rather as a means of recording a momentous journey, a specific form of history painting if you will, then what we have is not blurred vision, but a series of images in which time (the journey) has equal billing with space (the conglomeration of individual ‘views’). While these late works were indeed commissioned by Banks in the service of science, it is nevertheless notable that they were hung at the Royal Academy and viewed within the context of fine art.

The process of aggregation and aesthetic modification was one that was also repeated in Westall’s engravings. Between 1809 and 1812 Westall made nine paintings that were engraved for *A Voyage to Terra Australis*, and these were also issued separately under the name of *Views of Australian Scenery painted by William Westall*. The plate *A Voyage to Terra Australis, View from the South Side of King George’s Sound* (vol. 1, facing p. 60), for example, was selected by Banks as one of several to be included in the *Voyage*. Yet here again scientific concessions were made to the public taste for the ‘Picturesque’ view, as the foreground has been populated with ‘a little business for the eye’⁵⁸: a grass tree from Port Jackson (near Sydney) and a eucalyptus from Spencer Gulf in South Australia, both of which appear in earlier drawings. Westall had encountered Aboriginal people during the ship’s extended stay in King George Sound (see *King George’s Sound, A Native* [1801]), although this Aboriginal couple sitting at a fire is highly reminiscent of other classicised figures that appear in Westall’s drawings of the Port Jackson region too. The background landscape was largely based on a drawing made *in situ* in December 1801, *King George’s Sound: View from Peak Head*, showing the isthmus between the Sound and Princess-Royal Harbour.⁵⁹ Here again, working to Flinders’s exact specifications, the shape of the coastline and geological contours of the headland are carefully recorded, using sparse shading to create shadows and the illusion of form.

The scientific demands on Bauer and Westall led them to seek immutability and certainty. They sketched constantly, moving between ship and land to secure the best vantage points, and in Bauer's case to collect and observe as many specimens as possible. Even when they sketched on board in their floating studios, or on deck (in Westall's case), *Investigator* was almost always on the move. They were, in Driver and Martins's words, 'perpetually unsettled.'⁶⁰ Yet it was not only the artists that were so often in motion, but their subjects too, as the natural world is constantly in flux. When read in conjunction with the other textual and graphic representations produced on board, the pencil sketches of the two artists traced a journey: yet that journey is rendered invisible within the sketches themselves. Rather, the exigencies of imperial politics exerted pressures on time, leading to Bauer's ingenious 'colour by number' system and Westall's adherence to convention in inscribing geographical co-ordinates onto his coastal profiles. Imperial mobilities were perceived as a profound threat to the certainties of the stable subject, and thus required regulation. The drawings of Bauer and Westall participated in this regulatory process, suggesting a world of absolutes and certainties, with no signs of blurred vision. They reflect not only the tensions of the age, but also those between the conventions and demands of science and art.

¹ Matthew Flinders, *A Voyage to Terra Australis*, vol. 1 (London: G.W. Nicol, 1814), p. 21.

² C.F. Greville to Robert Brown, 14 January 1802. F.M. Bladen (ed.), *Historical Records of New South Wales*, I (Sydney: C. Potter / Government Printer), p. 678.

³ Flinders *A Voyage to Terra Australis*, vol. 1, p. 193. Banks later praised Flinders for allowing his scientists time ashore to botanise: '[Flinders] deserves, in my opinion, great credit from the Public for the pains he must have taken to give you a variety of opportunities of Landing and Botanising. Had Cook paid the same attention to the Naturalists as *he* seems to have done, we should have done much more at that time.' Phyllis I. Edwards, 'Sir Joseph Banks and the Botany of Captain Cook's Three Voyages of Exploration', *Pacific Studies*, 2 (1978), 28. Kenneth Morgan, 'Sir Joseph Banks as patron of the *Investigator* expedition: natural history, geographical knowledge and Australian exploration', *The International Journal of Maritime History*, 26:2 (2014), p. 255.

⁴ This author's italics. Banks to George John Spencer, First Lord of the Admiralty, DATE, Letter 82, Neil Chambers (ed.), *The Letters of Sir Joseph Banks. A Selection, 1768-1820* (London: Imperial College Press, 2000), p. 221. To complete Flinders's triangulation surveys, he and Westall also needed to go ashore at strategic points along the coast, although the time spent surveying was less than that required by the natural historians. In another example, Bauer wrote to Banks imploring him to allow him and Brown to remain in Sydney while Flinders returned to London to collect a replacement vessel: 'our stay in New South Wales would add much to the collections and if not new subjects could be procurt [sic] I would be able to finish some from them wath [sic] I have already made, and must bei [sic] done in England'. Bauer to Banks, 8 August 1803, cited by Marlene J. Norst, *Ferdinand Bauer: The Australian Natural History Drawings* (London: British Museum [Natural History]), 1989, p. 109.

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- ⁵ Banks to Brown, 8 April 1803. Letter 91, Neil Chambers (ed.), *The Letters of Sir Joseph Banks. A Selection, 1768-1820* (London: Imperial College Press, 2000), p. 244. This author's italics.
- ⁶ Banks to Brown, 8 April 1803. Letter 91, Neil Chambers (ed.), *The Letters of Sir Joseph Banks. A Selection, 1768-1820*. Banks credits the rise of popular interest in natural history with Flinders's decision to allow the scientists more time to botanise than Cook had. Despite Banks's claim, the naturalists on both voyages were, like their surveying counterparts, also engaged in a race to publish their findings, so many of which were also new to European science. See Hans Walter Lack, *The Bauers: Joseph, Franz and Ferdinand. Masters of Botanical Illustration. An Illustrated Biography* (Munich: Prestel, 2015), pp. 257, 270.
- ⁷ Paul Smethurst, 'Mobility and Empire' in Julia Kuehn, and Paul Smethurst. *Travel Writing, Form and Empire: The Poetics and Politics of Mobility* (New York: Routledge, 2012), p. 2.
- ⁸ David Young Kim, *The Traveling Artist in the Italian Renaissance: Geography, Mobility, and Style* (New Haven: Yale University Press, 2017), p. 95.
- ⁹ Bruno Latour, *Science in Action: How to Follow Scientists and Engineers Through Society* (Cambridge: Harvard University Press, 1987), pp. 224-25.
- ¹⁰ Latour, *Science in Action*, p. 224.
- ¹¹ Latour, *Science in Action*, p. 225.
- ¹² Kapil Raj, 'Networks of Knowledge, or Spaces of Circulation? The Birth of British Cartography in Colonial South Asia in the Late Eighteenth Century', *Global Intellectual History*, June 2017, p. 4.
- ¹³ Felix Driver and Luciana Martins, 'Visual Histories: John Septimus Roe and the Art of Navigation, c. 1815-1830', *History Workshop Journal*, 54 (2002), pp. 149-150.
- ¹⁴ Bernard Smith, *Imagining the Pacific: In the Wake of the Cook Voyages* (New Haven: Yale University Press, 1992), p. 3.
- ¹⁵ Banks to Flinders, June 1801, in Bladen (ed.), *Historical Records of New South Wales*, iv, p. 388. Kenneth Morgan, 'Sir Joseph Banks as Patron of the *Investigator* Expedition: Natural History, Geographical Knowledge and Australian Exploration', *The International Journal of Maritime History*, 26:2 (2014), p. 245.
- ¹⁶ The work of Bernard Smith is foundational in this regard. See in particular *European Vision and the South Pacific* (New Haven: Yale University Press, 1985); *Imagining the Pacific in the Wake of the Cook Voyages*.
- ¹⁷ Westall's talents were spotted by Benjamin West, President of the Royal Academy, when Banks's first choice, the experienced travel artist William Daniel, decided not to undertake the voyage due to his impending marriage to Westall's half-sister, Mary. Richard J. Westall, 'Westall, William (1781-1850)', *Oxford Dictionary of National Biography* (Oxford: Oxford University Press, 2004); online ed., Jan 2008 [<http://www.oxforddnb.com/view/article/29107>, accessed 3 Nov 2017]
- ¹⁸ Most of Bauer's specimens ended up at the Naturhistorisches Museum in Vienna, where they remain to this day.
- ¹⁹ David Maberley, *Painting by Numbers: The Life and Art of Ferdinand Bauer* (Sydney: New South Publishing, 2017), p. 94; T.G. Vallance, D.T. Moore and E.W. Groves, *Nature's Investigator: The Diary of Robert Brown in Australia, 1801-1805*, (Canberra: Australian Biological Resources Study, 2001), p. 191.
- ²⁰ Maberley, *Painting by Numbers*, p. 86.
- ²¹ Bauer to Banks, Sydney, 8 August 1803, British Library, Add. MS. 32439, fl. 25. Bauer's mis-spellings retained.
- ²² Carl Linnaeus, *Philosophia Botanica*, translated by Stephen Freer (Oxford: Oxford University Press, 2003), p. 229. Cited by K. Nickelsen, 'The Challenge of Colour: Eighteenth-Century Botanists and the Hand-Colouring of Illustrations', *Annals of Science*, 63 (2006), p. 1.
- ²³ Linnaeus, *Philosophia Botanica* (Stockholm, 1751, p. 224). Cited by K. Nickelsen, 'The Challenge of Colour: Eighteenth-Century Botanists and the Hand-Colouring of Illustrations', p. 1.
- ²⁴ For these he used a microscope.
- ²⁵ The Naturhistorisches Museum in Vienna holds a colour coded drawing of a common sandpiper, *Scolopacidae*, inscribed with numbers up to 1,000.
- ²⁶ Maberley, *Painting by Numbers*, p. 79
- ²⁷ Lack, *The Bauers*, p. 262.
- ²⁸ Author's italics. Edwards, 'Botany of the Flinders voyage', p. 160; YNA, ADM 1/4379, Admiralty Correspondence and Papers, Banks to Marsden, January 1806. Kenneth Morgan (ed.), *Australia Circumnavigated The Voyage of Matthew Flinders in HMS Investigator, 1801-1803*, vol. 1 (London: The Hakluyt Society, 2015), p. 69.
- ²⁹ Lack and Ibanez, 'Recording Colour in Late Eighteenth Century Botanical Drawings: Sydney Parkinson, Ferdinand Bauer, and Thadäus Haenke', *Curtis's Botanical Magazine*, 14 (1997),

pp. 97-8. Westall lost many of his works entirely in the wreck of the *Porpoise* in 1803, and many others were severely water damaged.

³⁰ Ferdinand to Franz Bauer, 8 April 1803, cited and translated by Marlene J. Norst, *Ferdinand Bauer: The Australian Natural History Drawings*, p. 104.

³¹ Brown to Banks, 13 October 1805, in Bladen (ed), *Historical Records of New South Wales*, V, pp. 711-12. Morgan, *Australia Circumnavigated The Voyage of Matthew Flinders in HMS Investigator, 1801-1803*, p. 67.

³² Morgan, 'Sir Joseph Banks as patron of the *Investigator* expedition: natural history, geographical knowledge and Australian exploration', p. 258. Bauer's pencil sketches were of course much more rapidly executed: in one week, for example, he is known to have produced 61 drawings. Mabberley, *Painting by Numbers*, p. 125.

³³ Morgan, *Australia Circumnavigated The Voyage of Matthew Flinders in HMS Investigator, 1801-1803*, p. 72.

³⁴ Barbara Wittmann, 'Outlining Species: Drawing as a Research Technique in Contemporary Biology. Science in Context', *Science in Context*, 26:2 (2013), pp. 363-391, p. 366. See also Peter Watts, Joanne Pomfrett, and David Mabberley, *An Exquisite Eye: the Australian Flora and Fauna Drawings 1801 - 1820 of Ferdinand Bauer* (Sydney: Historic Houses Trust of NSW, 1997), pp. 36-37. Lack also refers to a recent proposal that Bauer's drawing of the koala, *Phascolarctos cinereus*, become recognised as the 'type'. *The Bauers*, p. 279.

³⁵ Latour, *Science in Action: How to Follow Scientists and Engineers Through Society*, pp. 224-25.

³⁶ David Mabberley, *The Nature of Discovery* (London: The Natural History Museum, 1990), p. 94.

³⁷ The Admiralty issued a memorandum, instructing: 'Their Lordships require the draughtsman employ'd for natural history to pay due attention to the directions he shall receive from the naturalist; and the draughtsman employ'd for landscape and figures, to pay regard to the opinion of the commander in the choice of objects most fitting to be delineated ...'. Admiralty to Banks, 29 April 1801, Bladen (ed), *Historical Records of New South Wales*, IV, p. 350.

³⁸ Flinders, *Private Journal*, XXX. Personal correspondence from Captain M.K. Barritt, 1 July 2015.

³⁹ Driver and Martins, 'Visual Histories: John Septimus Roe and the Art of Navigation, c. 1815-1830', p. 147.

⁴⁰ See Sam Smiles, 'Landscape Painting, c1770-1840', in Dana Arnold and David Peters Corbett, *A Companion to British Art* (London: John Wiley & Sons, 2016), p. 403.

⁴¹ Westall letter to Banks, 31 January 1804, Banks Papers IV, f. 149, Mitchell Library, State Library of New South Wales, Sydney.

⁴² Bruno Latour, 'Drawing Things Together', in Michael Lynch and Steve Woolgar (eds), *Representation in Scientific Practice*, (Cambridge MA: MIT Press, 1990), p. 27. Latour relies here on the work of Metropolitan Museum of Art print curator William Ivins.

⁴³ Latour, 'Drawing Things Together', p. 28.

⁴⁴ Flinders, *A Voyage to Terra Australis*, vol. 1, p. 143.

⁴⁵ Denis Cosgrove, *Mappings* (London: Reaktion, 1999), p. 98.

⁴⁶ This author's italics. Driver and Martins, 'Visual Histories: John Septimus Roe and the Art of Navigation, c. 1815-1830', p. 147. Alexander Dalrymple, *Essay on Nautical Surveying* (London, 1771), p.4, cited in above. See also Martins, 'Mapping Tropical Waters: British Views and Visions of Rio de Janeiro', in Cosgrove, *Mappings*, p. 155.

⁴⁷ Bauer's subjects can often be cross referenced with the manuscript slips on Robert Brown's herbarium specimens, thus pinpointing their original location and the date sighted. See Introduction to Vallance, Moore and Groves, *Nature's Investigator: The Diary of Robert Brown in Australia, 1801-1805*, p. 19; Lack, *The Bauers*, pp. 250-251.

⁴⁸ Mabberley, *Painting by numbers*, p. 79; Lack, *The Bauers*, p. X.

⁴⁹ Bernard Smith, *Imagining the Pacific: In the Wake of the Cook Voyages*, p. 48; Morgan, *Australia Circumnavigated The Voyage of Matthew Flinders in HMS Investigator, 1801-1803*, p. 80.

⁵⁰ Email correspondence from Captain Michael Barritt to the author, 1 July 2015.

⁵¹ T.M. Perry's annotated catalogue in T.M. Perry and D.H. Simpson, *Drawings by William Westall* (London: The Royal Commonwealth Society, 1962), cat. no. 8, p. 38.

⁵² Roland Barthes, 'The Reality Effect', 1968 (reprinted in *The Rustle of Language*, trans. R. Howard, Berkeley: University of California Press, 1989).

⁵³ Personal correspondence with Dr James Taylor, 17 June 2015.

⁵⁴ Captain M.K. Barritt in personal correspondence with the author, 30 June and 1 July 2015. I am most grateful to Captain Barritt for sharing his insights. The same was also likely for Cook's *Endeavour* voyages – see A. David (ed.), *The Charts and Coastal Views of Captain Cook's Voyages*, vol. 1 (London: The Hakluyt Society, 1988), pp. xl-xli.

⁵⁵ John Robertson, *Elements of Navigation* (London: J. Nourse, 1780), p. 70

⁵⁶ M.K. Barritt, 'Matthew Flinders's Survey Practices and Records', *The Journal of the Hakluyt Society*, March 2014, pp. 1-15. The one period of his life that Flinders would have time to compile and revise his findings, drawing from his extensive field records, was during his six and a half year (1803-1810) detention by the French on the *Île de France* (now Mauritius) on his way back to England. He also made revisions back in London when working on the *Atlas* which was produced to accompany *A Voyage to Terra Australis*, published in the year of his death, 1814. See also Morgan, 'Sir Joseph Banks as patron of the *Investigator* expedition: natural history, geographical knowledge and Australian exploration', p. 249.

⁵⁷ Barritt, personal correspondence, 30 June and 1 July 2015.

⁵⁸ Thomas Gainsborough, undated letter to William Jackson, cited in Michael Rosenthal, *The Art of Thomas Gainsborough: "A Little Business for the Eye"* (New Haven: Yale, 1999), p. 186. In volume one of *A Voyage to Terra Australis*, Flinders's talks about diverting the ship to Fiji, 'to give variety to the painters', p. 10.

⁵⁹ Perry and Simpson, *Drawings by William Westall*, cat. no. 11, p. 38.

⁶⁰ Driver and Martins, 'Visual Histories: John Septimus Roe and the Art of Navigation, c. 1815–1830', p. 65.

List of Captions: Plates

1. Ferdinand Bauer, *Trichoglossus Haematodus Moluccanus* (Rainbow lorikeet), after 1814, London, watercolour on paper, 33.6 x 50.6 cm, plate 26, The Natural History Museum, London
2. Ferdinand Bauer, *Thysanotus volubilis*, 1806-10, London, watercolour on paper, 52.5 x 35.8 cm; **plate 212 (p. 294 in Walter Lack *The Bauers*)**, The Natural History Museum, London
3. Ferdinand Bauer, *Actitis* (common sandpiper, scolopacidae), 1805, Atlantic south-west of Cape Verde Islands, pencil on paper, **dimensions**, Naturhistorisches Museum, Vienna
4. Ferdinand Bauer, *Acanthaluteres brownie* (Spiny-tailed, or Brown's leatherjacket), c. 1811, London, watercolour on paper, 33.8 x 50.5 cm; The Natural History Museum, London (<http://melbournartnetwork.com.au/2016/08/04/lecture-the-art-of-travel-in-the-name-of-science-sarah-thomas-university-of-melbourne/>)
5. William Westall, *Views on the South Coast of Terra Australis. Plate XVII / drawn by W. Westall*, [London] Published as the Act directs by G and W Nicol Pall Mall, May 2, 1814; National Library of Australia, MAP T 1573. <http://nla.gov.au/nla.obj-232686225/view>
6. William Westall, *South Coast, Bald Head, Eclipse Island and Seal Island*, [1801], pencil on paper, National Library of Australia (NLA #R4381, <https://nla.gov.au/nla.obj-138885978/view>)
7. William Westall, *Views on the south coast of Australia*, 1801-02, watercolour on paper, 31.1 x 44.5 cm; National Library of Australia (NLA #R4386, <https://nla.gov.au/nla.obj-138887483/view>)
8. Ferdinand Bauer, *Portunus pelagicus* (Blue swimmer crab) [detail –top crab only], 1802, St Vincent's Gulf, South Australia, pencil on paper, 52.8 x 35.6 cm; archive, Naturhistorisches Museum, Vienna (<https://www.pinterest.co.uk/pin/195625177539391425/>)
9. William Westall, *King George's [i.e. George] Sound, view from the north-west*, [1801], pencil & wash on paper, 16 x 26.7 cm; National Library of Australia (<https://nla.gov.au/nla.obj-138874929/view>)