

## **SEVENTH FRAMEWORK PROGRAMME**

### **"Ideas" Specific Programme**

### **European Research Council**

### **Grant agreement for Consolidator Grant**

#### **Annex I - "Description of Work"**

**Project acronym:** GBR

**Project full title:** Genius before Romanticism: Ingenuity in Early Modern Art and Science

**Grant agreement no.:** 617391

**Duration:** 60 months

**Date of preparation of Annex I:** 17 January 2014

**Principal Investigator:** Dr Alexander Marr

**Host Institution:** University of Cambridge (CRASSH)

## PROPOSAL SUMMARY:

What existed in the European imagination before the Romantic concept of ‘genius’? This five-year project will examine notions of unique talent, heightened imagination and extraordinary creativity in art and science by exploring the language, theories, practices and products of *ingenium* (ingenuity) *ca.* 1450-*ca.* 1750. Drawing on the perspectives of history of art, history of science, technology and medicine, intellectual history and literary studies, the project seeks to capture ingenuity across and between disciplines. Studying six countries (France, Germany, the Netherlands, Italy, England and Spain) across three centuries, it will trace ingenuity’s shifting patterns and fragmented fortunes over the *longue durée*.

Research will be conducted in four strands, focused on distinctive but interrelated aspects of ingenuity. Strand 1, The ‘Language of Ingenuity’, will chart the word history of the ingenuity family of terms. Strand 2, ‘Conceptualizing Ingenuity’, will explore the intellectual framework of ingenuity through its theoretical treatment in natural philosophy and artistic theory. Strand 3, ‘Ingenuity in the Making’, will examine the cunning knowledge of ingenious craftsmen and the properties of ‘spirited’ materials. Strand 4, ‘Ingenious Images’, will investigate the visual culture of ingenuity, from the iconography of *ingenium* to the witty disingenuousness of optical games.

The findings of the project team will be disseminated to a scholarly audience and the wider public through monographs, volumes of essays, a critical edition, an exhibition, conferences and colloquia, and a project website.

## PART B1

### SECTION A: EXTENDED SYNOPSIS OF THE SCIENTIFIC PROPOSAL

Genius is widely recognised as one of the defining features of modern culture, but what existed before its rise in the Romantic age? This five-year project explores the prehistory of genius by examining the language, theories, practices, artefacts and individuals associated with *ingenium* (ingenuity): the early modern period’s umbrella term for the multiple strands that would later coalesce into a recognisably modern concept. It investigates how notions of unique talent, heightened imagination and creative intelligence were understood, represented and reconfigured through images, texts, objects and customs in Europe *ca.* 1450-*ca.* 1750. By adopting a multi-sited approach to the subject across three centuries, the project will offer the first integrated account of early modern ingenuity over the *longue durée*.

‘A happy genius,’ wrote John Dryden, ‘is the gift of nature: it depends on the influence of the stars, say the astrologers, on the organs of the body, say the naturalists; ‘tis the particular gift of heaven, say the divines, both Christian and heathens. How to improve it, many books can teach us; how to obtain it, none: that nothing can be done without it all agree.’ (Dryden, 1695). Thus, ingenuity was recognised in the period as a fundamental quality of humanity, but its origins and ends were the subject of intense debate, spread across multiple domains. Modern disciplinarity has severed the ties that, in the early modern period, bound together the fields in which ingenuity was defined and contested. Indeed, a characteristic feature of pre-modern ingenuity was its refusal to settle comfortably within the circumscribed boundaries of any given cultural sphere. The expansiveness, elusiveness and heterogeneity of early modern ingenuity demand a collaborative, interdisciplinary approach to its history.

This project will adopt just such an approach, conducting research in four strands focused on distinctive but interrelated aspects of the subject:

- **Strand 1, The Language of Ingenuity**, maps ingenuity through the terminology used to define and express it. It investigates the semantics of a network of closely related terms, such as *ingenium*, *spirito*, wit and invention, examining their shifting patterns across varied sources.
- **Strand 2, Conceptualizing Ingenuity**, explores the intellectual framework of ingenuity through its theoretical treatment in natural philosophy and artistic theory. It examines the content and context of *topoi* such as ‘genial melancholy’, imagination and mathematical intelligence.
- **Strand 3, Ingenuity in the Making**, studies the ingenious techniques of artists and master-craftsmen, the properties of ‘spirited’ materials and virtuosic creative performance. It investigates how the ‘cunning knowledge’ of artisans travelled and transformed.

- **Strand 4, Ingenious Images**, examines the visual culture of ingenuity, from the iconography of *ingenium* to the witty disingenuousness of optical games. It traces how themes such as inspiration, enchantment and invention informed and were represented in art.

The four strands enable a capacious but focused investigation of a complex cluster of topics and sources. They provide a structure for collaborative, cutting-edge research at the frontiers of multiple disciplines, including history of art, intellectual and social history, literary studies, modern languages, and history of science, technology and medicine. Bringing these disciplines into constructive dialogue around a major topic of inquiry, the project aims to:

- Excavate in detail a culture of major significance to the artistic, intellectual and social lives of early modern people.
- Provide a multi-layered account of ingenuity over the *longue durée*.
- Enrich the connections between the disciplinary domains in which ingenuity may be studied, while opening avenues for new research.
- Disseminate research results through four monographs, three volumes of collected essays, a scholarly edition, an exhibition, conferences and colloquia, and a project website.

### Starting Points

The project has been framed according to four observations:

1. Early modern Europe witnessed a remarkable flourishing of interest in ingenuity, beginning in the mid-fifteenth century and connected especially with the revival of Neoplatonism (Brann, 2002). The second half of the eighteenth century saw decisive shifts in attitudes towards ingenuity, associated particularly with the writing of Kant, which mark the beginnings of Romantic notions of genius (Klein, 1996).

This provides a basis for the **chronology** of the project. While approaching with skepticism the idea that the history of ingenuity may be written in terms of unambiguous origin or decisive rupture, useful temporal markers are Ficino's mid-fifteenth century philosophical writings – especially his commentaries on Plato – and Diderot's 'Sur le génie' in the *Encyclopédie* (1757). Ficino's writings, including his discussion of the *furor poeticus*, are the fullest post-medieval articulation of a theory of 'inspired ingenuity'. Diderot's essay concisely summarises ingenuity as it had developed in the preceding several centuries, while pointing towards the major changes ingenuity was beginning to undergo, especially in its relationship to sensibility and originality (Dieckmann, 1941). The project views its chronological boundaries as porous, adopting a flexible approach in order to respond effectively to the subtleties of tradition and transformation. It seeks to identify and explain the fundamental changes ingenuity underwent over three centuries while attending to the messy, staggered nature of those changes.

2. Ingenuity *ca.* 1450-*ca.* 1750 was heterogeneous (Murray, 1989), transforming only gradually and fragmentally across multiple domains (Gensini and Martone, 2002).

This determines the **interdisciplinary nature** of the project. A major aim is to comprehend more thoroughly the relationships, gaps and cross-pollination between the myriad cultural spaces in which ingenuity resided. While certain key resources have been identified, it places no restrictions on the types of source material to be studied. The project will therefore – in a manner not attempted before – examine together works of art and architecture, printed texts and manuscripts, and scientific objects through the lens of ingenuity. This will afford new insights into the relationships between visual, verbal and material instantiations of the ingenuity.

3. Notions of ingenuity could vary significantly between different regions of Europe (Zilsel, 1926); this regional specificity affected how and where ingenuity evolved.

This suggests that a **multi-sited approach** is the only means by which the transformation of ingenuity in art and science may accurately be captured. While there exist useful accounts of ingenuity in particular places and times, a pan-European account has never before been attempted. Springing from the PI's expertise, the

project will examine ingenuity in France, Italy, Germany, the Netherlands, England and Spain. It will address issues of transmission, influence and distinctiveness by comparing meanings, uses and representations of ingenuity in and across these countries' cultures.

4. Ingenuity was highly polysemous. The wide range of ideas associated with it were expressed through a family of terms centred upon *ingenium* and its vernacular cognates, including (in English) soul, mind, spirit, imagination and cunning (Putscher, 1973; Graziosi, 2004).

This suggests that we should approach **ingenuity as a culture** rather than as a fixed, clearly delineated concept. In particular, it demands sustained concentration on the language used to define and describe it. The project begins with a word history of ingenuity, but it is equally concerned with the visual and material language of ingenuity. It will study ingenuity as a set of notions and themes that overlapped, rebounded and blended in creative tension throughout the early modern period.

### **Research Strands**

Guided by the principles outlined above, research will be conducted in the following four strands:

#### **Strand 1: *The Language of Ingenuity***

Efforts to study the history of early modern ingenuity without recourse to the language in which it was defined and expressed have hitherto foundered on the twin rocks of its challenging miscellaneity and stubborn elusiveness. Guided by the productive methods employed by Kenny in his study of early modern curiosity (Kenny, 1998) – especially his arguments for language as constitutive of meaning – the project proceeds from the premise that a word history is the best way to begin tackling these obstacles. By establishing a clear linguistic framework within which to operate, this word history will bring into sharper focus the *topoi* to be studied, providing a stable foundation on which to build a history of the meanings, contexts and ramifications of early modern ingenuity.

The project team will map ingenuity through the constellation of Latin and vernacular terms orbiting *ingenium*, which in English included spirit, soul, wit, ingenuity, genius, reason, intellect, mind, imagination, inspiration and fantasy (Fattori and Bianchi, 1984 and 1988). Research will be conducted on two key types of early modern primary source: (i) dictionaries and lexicons, (ii) published texts on art and science that expressly invoke ingenuity's 'keywords' in their titles.

Key research outcomes:

- A full **word history** of the ingenuity family of terms in Latin and the vernacular.
- The compilation of a **bibliography of primary sources** on ingenuity that will guide research in Strands 2, 3 and 4.

#### **Strand 2: *Conceptualizing Ingenuity***

While early modern ingenuity was by no means limited to theory, the project argues that it is impossible fully to comprehend its contours without recourse to the intellectual framework in which it was situated, defined and debated by scholars, artists, patrons and other literate elites. Building on the etymological and semantic research undertaken in Strand 1, Strand 2 will explore the conceptual terrain of ingenuity in natural philosophy and artistic theory, while attending to the important contexts of theology, medicine and rhetoric (Brann, 2002).

Within these domains the project will examine subjects such as theories of the creative imagination and artistic fantasy, ingenuity in the philosophy of human understanding, humoral theories of 'genial melancholy', and ingenuity as the root of creative intelligence. It will trace the connections between ingenuity and 'neighbouring' concepts such as curiosity and wonder, *disegno*, and invention. Particular attention will be paid to the distinctiveness of regional traditions and the means by which theories of ingenuity were transmitted across Europe.

Key research outcomes:

- A new, **holistic account** of the conceptual life of ingenuity, tracing for the first time the connections between the disciplines in which it was theorised.

- A **comparative history** of theories of ingenuity across Europe.

### **Strand 3: *Ingenuity in the Making***

Where Strand 2 explored the conceptual landscape of ingenuity, Strand 3 examines the material contexts in which it lived. Moving from the abstract to the concrete, this strand studies how ingenuity was embodied, paraded and moulded by artists and craftsmen. It assesses in detail the cunning knowledge employed in manufacturing, investigating how and why certain techniques, skills and professions came to exemplify the ingeniousness of a ‘mindful hand’ (Roberts, Schaffer and Dear, 2007). Focusing attention on the manipulation of materials, this strand asks also how matter itself could be considered ingenious or ‘spirited’, investigating how craftsmen comprehended the properties of ‘subtle’ substances such as hardstones, glass, metals and paint (Göttler and Neuber, 2008). The project will pursue the bodily and mental regimes required to control the ‘liveliness’ or *esprit vif* of these challenging materials, revealing especially the sensual qualities of ingenuity in the workshop.

How, though, were ingenious processes transmitted, how were they codified, regulated, usurped and copied? Strand 3 will investigate the complex intersections of ‘tacit’ and explicit knowledge as it circulated in books of secrets, manuscript recipes and how-to books. It will pursue the movements of ingenious know-how as it shuttled between the workshop, the study and the salon, tracing as it does so the controlling and subversive forces of patenting and plagiarism.

Key research outcomes:

- A **sensual and material history** of early modern ingenuity.
- A study of **ingenious processes** and their **transmission** in different media.

### **Strand 4: *Ingenious Images***

From emblems of *ingenium* to personifications of the soul, the visual language of early modern ingenuity was richly plural. This strand casts its net widely to investigate the visual culture of ingenuity as manifested in paintings, prints, drawings, sculptures and the applied arts. While it is well known that melancholy became a particularly popular subject for visual artists in the early modern period (Panofsky, Saxl, Klibansky, 1963), the pictorial fate of ingenuity’s other myriad tropes has yet to be analysed in any detail. The project will, for the first time, provide a thorough account of the iconography of ingenuity in the early modern period. It will assess the depiction of themes such as inspiration, enchantment and the mythological origins of creativity, exploring the allegorical devices and figural tropes invented and exchanged by artists and their patrons.

Yet ingenuity’s visual life did not reside solely in its representations; it surfaced also in artefacts which were considered, by their very nature, to be ingenious. Thus, the project will examine images that sit at the intersection of wit, inventiveness and caprice, such as the optical games of anamorphic art or the fictive spirits of magic lantern shows. In so doing it will reveal the profound ambivalence of early modern ingenuity: the celebration of ingenious visual trickery as the acme of artistic *virtù* and the simultaneous anxiety about its dangerous associations with deceit. Thus, Strand 3 will treat the visual history not just of ingenuity but also of early modern disingenuousness.

Key research outcomes:

- A study of the **iconography of ingenuity** in early modern visual culture.
- A visual history of **ingenious artefacts and disingenuousness**.

## **PART B2**

### **SECTION A: STATE-OF-THE-ART AND OBJECTIVES**

The aim of this project is to transform our understanding of genius before Romanticism. Its main objectives are to:

- Excavate in detail a culture of major importance to the artistic, intellectual and social lives of early modern people.

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- Provide a multi-layered account of ingenuity over the *longue durée*.
- Enrich the connections between the disciplinary domains in which ingenuity may be studied, while opening avenues for new research.

Specific research objectives in the four strands identified in Part B1 are:

### Strand 1, *The Language of Ingenuity*

- A comprehensive word history of the ingenuity family of terms in Latin and the vernacular.

### Strand 2, *Conceptualizing Ingenuity*

- A new, holistic account of the conceptual life of ingenuity, tracing for the first time the connections between the disciplines in which it was theorised.
- A comparative history of theories of ingenuity across Europe.

### Strand 3, *Ingenuity in the Making*

- A sensual and material history of early modern ingenuity as located in artisanal techniques and materials.
- A study of how ingenious knowledge travelled in different media.

### Strand 4, *Ingenious Images*

- A study of the iconography of ingenuity in early modern visual culture.
- A visual history of ingenious artefacts and disingenuousness.

Taken together, these objectives will result in the first fully interdisciplinary account of early modern ingenuity. This will fundamentally reshape understanding of the cultural landscape of Europe *ca.* 1450-*ca.* 1750, providing a groundbreaking account of genius's prehistory.

### ***Starting Points***

The history of genius in its Romantic and post-Romantic formulations is well established. Long a staple of literary criticism and aesthetics, its trajectories in philosophy, literature (especially poetry), the writing of history and biography, politics, art and social life have been near-exhaustively studied. Schmidt's magisterial two volume study of the emergence and spread of genius as a concept in German culture 1750-1945 (Schmidt, 1985) exemplifies this attention, indicating also the extent to which twentieth-century fascination with genius has been bound up with its foundational role in the Nietzschean notion of the *Übermensch* and the rise of fascism. Particular interest has been directed towards the pathology of genius and its psychological aspects (Porter, 1987), due largely to the influence of Foucault's seminal work on madness as a concept. These troubled aspects of genius, coupled with the broad repudiation of Romantic idealism associated with post-modernism (deconstruction especially), help to account for the extensive critique of genius as a concept in the post-war academy. Nevertheless, it remains a serious topic of study across the arts and sciences. Attention has been trained especially on the relationship between genius, originality and theories of imagination in the later eighteenth and early nineteenth centuries (Engell, 1981), while recent work has focused on the significance of the market for print and the emergence of celebrity in this period (Higgins, 2005). The past decade has witnessed fresh attempts to comprehend genius and its attributes in an atemporal manner, notably in psychopathology (Eysenck, 2006), while semi-popular works attest to its continuing intellectual currency (Robinson, 2011) and growing relevance to comparatively young fields such as neuroscience (Andreasen, 2005).

Analyses of genius before the early modern period have focused predominantly on its stirrings in antiquity, tracing the well-documented tradition of the *genius loci* (Kunckel, 1974) and Platonic theories of divine inspiration and creative 'fury' (Murray, 1989). While the former persisted through the middle ages (particularly in Romance literature; Nitzsche, 1975) and into the early modern period (in relation to 'sacred space'; Walsham, 2011) it was both lexically and conceptually distant from the cloud of ideas that enveloped *ingenium* (OED, 2012). Thus, while the project will attend to the implications of the *genius loci* for theologically inflected accounts of 'spirit' and its potential relevance to the emergence of landscape as an independent genre of painting, this theme will play a lesser role than other aspects of proto-genius found in antiquity. By way of contrast, theories of poetic inspiration and *engin* were particularly significant precursors of early modern conceptualisations of ingenuity (Perkinson, 2002), indeed the mid- to late-fifteenth century fascination with the *furor poeticus* self-consciously invoked ancient traditions (Brann,

2002). Surprisingly, scholars of the early modern period have been slow to recognise the important ramifications for their period of a prominent feature of ancient Greek society: *metis*. The influential work of Detienne and Vernant has shown the extent to which notions of practical, cunning, skillful and technological intelligence pervaded and shaped Greek cultural identity (Detienne and Vernant, 1991). Transmitted in part to Roman culture in the guise of *sollertia*, the early modern afterlife of this type of ingenuity – associated especially with the myth of Daedalus and the lives of exemplary mechanics such as Archimedes – has yet to be explored in any detail.

This brief overview of the study of genius either side of the project's chronology highlights the extreme heterogeneity of the subject. As Panofsky has noted, this represents both a challenge and an opportunity (Panofsky, 1962). Murray, in an edited volume (Murray, 1989), sought to meet this challenge through the model of selected case studies in the history of genius from antiquity to the early twentieth century. Yet while the individual essays in that collection offer valuable accounts of particular aspects of ingenuity in specific places and moments, the volume as a whole is a highly episodic account of genius that fails adequately to define its object of study or to connect meaningfully the plural themes and periods it treats.

The project seeks to offer a new, more comprehensive account of ingenuity, proceeding from the following observations (outlined in Part B1):

5. Early modern Europe witnessed a remarkable flourishing of interest in ingenuity, beginning in the mid-fifteenth century and connected especially with the revival of Neoplatonism (Brann, 2002). The second half of the eighteenth century saw decisive shifts in attitudes towards ingenuity, associated particularly with the writing of Kant, which mark the beginnings of Romantic notions of genius (Klein, 1996).

This provides a basis for the **chronology** of the project. While approaching with skepticism the idea that the history of ingenuity may be written in terms of unambiguous origin or decisive rupture, useful temporal markers are Ficino's mid-fifteenth century philosophical writings – especially his commentaries on Plato – and Diderot's 'Sur le génie' in the *Encyclopédie* (1757). Ficino's writings, including his discussion of the *furor poeticus*, are the fullest post-medieval articulation of a theory of 'inspired ingenuity'. Diderot's essay concisely summarises ingenuity as it had developed in the preceding several centuries, while pointing towards the major changes ingenuity was beginning to undergo, especially in its relationship to sensibility and originality (Dieckmann, 1941). The project views its chronological boundaries as porous, adopting a flexible approach in order to respond effectively to the subtleties of tradition and transformation. It seeks to identify and explain the fundamental changes ingenuity underwent over three centuries while attending to the messy, staggered nature of those changes.

6. Ingenuity *ca.* 1450-*ca.* 1750 was heterogeneous (Murray, 1989), transforming only gradually and fragmentally across multiple domains (Gensini and Martone, 2002).

This determines the **interdisciplinary nature** of the project. A major aim is to comprehend more thoroughly the relationships, gaps and cross-pollination between the myriad cultural spaces in which ingenuity resided. While certain key resources have been identified, it places no restrictions on the types of source material to be studied. The project will therefore – in a manner not attempted before – examine together works of art and architecture, printed texts and manuscripts, and scientific objects through the lens of ingenuity. This will afford new insights into the relationships between visual, verbal and material instantiations of ingenuity.

7. Notions of ingenuity could vary significantly between different regions of Europe (Zilsel, 1926); this regional specificity affected how and where ingenuity evolved.

This suggests that a **multi-sited approach** is the only means by which the transformation of ingenuity in art and science may accurately be captured. While there exist useful accounts of ingenuity in particular places and times, a pan-European account has never before been attempted. Springing from the PI's expertise, the project will examine ingenuity in France, Italy, Germany, the Netherlands and England. It will address issues of transmission, influence and distinctiveness by comparing meanings, uses and representations of ingenuity in and across these countries' cultures.

8. Ingenuity was highly polysemous. The wide range of ideas associated with it were expressed through a family of terms centred upon *ingenium* and its vernacular cognates, including (in English) soul, mind, spirit, imagination and cunning (Putscher, 1973; Graziosi, 2004).

This suggests that we should approach **ingenuity as a culture** rather than as a fixed, clearly delineated concept. In particular, it demands sustained concentration on the language used to define and describe it. The project begins with a word history of ingenuity, but it is equally concerned with the visual and material language of ingenuity. It will study ingenuity as a set of notions and themes that overlapped, rebounded and blended in creative tension throughout the early modern period.

### The current field

Efforts to study the history of early modern ingenuity without recourse to the language in which it was defined and expressed have hitherto foundered on the twin rocks of its challenging miscellaneity and stubborn elusiveness. Murray assumed that a history of genius may be written independently of the close study of the language used to define and express concepts: ‘the history of the idea of genius is not the history of a word’ (p. 4). While it is abundantly clear that there is more to the study of early modern ingenuity than its terminology, since the pioneering work of Zilsel (Zilsel, 1926) it has become evident that the apparent ineffability and miscellaneity of genius as a historical concept may be managed only through attention to its concrete appearance in language. Guided by the productive methods employed by Kenny in his study of early modern curiosity (Kenny, 1998) – especially his arguments for language as constitutive of meaning – the project proceeds from the premise that a word history is the best way to begin tackling these obstacles. By establishing a clear linguistic framework within which to operate, this word history will bring into sharper focus the *topoi* to be studied, providing a stable foundation on which to build a history of the meanings, contexts, manifestations and ramifications of early modern ingenuity.

The language of early modern ingenuity was a set of overlapping words centred on the Latin *ingenium* but embracing also *spiritus* and *mens* (Hempel, 1965). As we have seen, it also had certain properties in common with *sollertia* – a term employed by Vitruvius, through whom it was transmitted to Renaissance writings on architecture (Payne, 1999). Some steps have been taken to map the evolution of and relationships between these words and their vernacular cognates, which include *âme*, *esprit*, *génie*, *engin*, *ingegno*, *spirito*, *virtù*, *intelletto*, *espíritu*, *Vernunft*, *Verstand*, *Geist*, *geest*, wit, reason, ingenuity, soul, imagination and cunning (Fattori and Bianchi, 1984 and 1988). Yet research to date has been sporadic, investigating only a single term or small cluster of words over a short period. The most useful examples include Sommer’s 1942 dissertation on *génie* and Ritter’s short history of that term (Sommer, 1998; Ritter, 1974), Vallini’s work on the semantic derivations of the Latin *genius* and *ingenium* (Vallini, 2002), Graziosi’s short study of the terminology of ingenuity in sixteenth- and seventeenth-century Italy and France (Graziosi, 2004), Armogathe’s notes on the language of *âme* in seventeenth-century France (Armogathe, 1984) and Emison’s account of *ingegno* in Renaissance Italy (Emison, 2004).

These studies represent an important springboard for the project’s work, but they lack both systematicity and breadth. The originality of Strand 1 of the project lies in its ambition to chart not just a subset of the language of ingenuity, but the full, complex web of its terminology in Latin, French, Italian, German, Dutch and English over three centuries, in a systematic manner and in context. This is a demanding task that may only be accomplished through the collaborative, interdisciplinary approach to which the project is committed. Likewise, only a thorough study of terminology, with recourse to carefully chosen source materials, will produce an account of sufficient robustness on which to build the more elaborate structure of historical meanings, contexts and expressions of ingenuity. Thus, research in Strand 1 will be uniquely important not only for work on the project’s subsequent strands, but also for all future studies of ingenuity and its attendant themes in the early modern period. Indeed, it is expected that the study of this group of words will identify exciting new research horizons in the history of language and concepts in the early modern period. The project team will map ingenuity through the constellation of Latin and vernacular terms orbiting *ingenium* by studying two key types of early modern primary source: (i) dictionaries and lexicons, (ii) published texts on art and science that expressly invoke ingenuity’s ‘keywords’ in their titles. This research will help to identify important primary sources through which theories of ingenuity in art and science may be studied.

While early modern ingenuity was by no means limited to theory, the project argues that it is impossible fully to comprehend its contours without recourse to the intellectual framework in which it was situated, defined and debated by scholars, artists, patrons and other literate elites. Building on the etymological and semantic research undertaken in Strand 1, Strand 2 will explore the conceptual terrain of ingenuity.



As Goodey recently noted, “by the time of [the late seventeenth-century] *ingenium* had become a whole empire” (Goodey, 2011). Thus, in charting the ways and disciplinary spaces in which early moderns conceptualised ingenuity, we must cast our net widely. It is clear that the intellectual frames in which ingenuity was treated intersected to a considerable degree, but broadly speaking early modern ingenuity was conceptualised within natural philosophy, theology, medicine, rhetoric and artistic theory (which may be said to embrace both poetics and the literature of visual art and architecture). Of these, medicine, rhetoric and theology have received the most scholarly attention. Extensive work has been undertaken on debates surrounding ‘genial melancholy’ in humoural theory and its relation to madness and creativity (Panofsky, Saxl and Klibansky, 1963; Schleiner, 1991; Brann, 2002). In the history of early modern rhetoric, the necessity of *ingenium* to ‘finding out’ an argument or choice turn of phrase is well established (Hidalgo-Serna, 1983; Mack, 2011). This aspect of rhetoric’s implications for the visual arts has been expertly surveyed (Van Eck, 2007). Equally, the doctrine of the immortality of the Christian soul and the notion of ‘ravished wits’ in ecstatic religious experience has been documented in some detail by historians of theology (Di Napoli, 1983). These three domains – medicine, rhetoric and theology – will therefore inform the project’s work on ingenuity’s conceptual history, but research will be focused on natural philosophy and artistic theory.

In natural philosophy, discussions of ingenuity were located especially within the ‘science of the soul’: a longstanding tradition concerned with the means by which human beings come to comprehend the world through the operations of the mental faculties (the ‘inward wits’) and the five senses (the ‘outward wits’). Together, these made up the sensitive and intellective souls (Park, 1988; Serjeantson, 2011). Within this tradition natural philosophers debated how faculty psychology could explain humans’ capacity for reason; the means by which the mind could be taught, honed, trained or inspired; and the differences between the three types of ‘spirit’ through which ingenuity functioned (Harvey, 1975). Important recent research has demonstrated the extent to which *ingenium*, as it pertained to both souls, was debated within this context (Bakker and Thijssen, 2008), but to date scholarship has concentrated largely on commentaries on Aristotle’s *De anima*. Indeed, despite the undoubted importance of this tradition for the fortunes of ingenuity, there remain major gaps in our understanding of *ingenium* in natural philosophy. For instance, the significance of *ingenium* within the reform of philosophy advocated by Francis Bacon and later taken up by the Royal Society; its significance for Jesuit pedagogy; its relationship to magic and occult philosophy, in the works of Agrippa, Bruno and Fludd, are among the topics that will benefit from serious and sustained study. Moreover, while we are reasonably well informed about the contours of philosophical treatments of the imagination in certain places and times – for instance, in the work and influence of Malebranche (Carré, 1998; Carbone and Vermeir, 2012) – the historical image is currently decidedly patchy. Frustratingly, the same may be said of one of the most interesting and important aspects of ingenuity’s rise to prominence in the early modern period: its connection to mathematics, specifically the notion of geometrical *esprit*. This has been touched upon lightly – notably in relation to Descartes, Pascal and Leibniz (Bold, 1996; Jones, 2006) – but its history has yet to be fleshed out fully. In particular, the project will place the rise of mathematical ingenuity within its long-term gestation, connecting, for example, the arguments for mental *esquisitezza* in mathematical scholarship presented by the sixteenth-century humanist revivers of mathematics with later developments in the ‘new science’ (Marr, 2011).

At this juncture, the significance of ingenuity for the early modern period’s most important philosopher, Descartes, must be addressed, since the project aims to transform the way in which we comprehend the position of *ingenium* within his oeuvre. To date, Descartes’s early and powerful interest in *ingenium* has been downplayed (Schuster, 2012), but the discovery of an early draft of his *Regulae ad directionem ingenii* (‘Rules for the direction of the *Ingenium*’, published posthumously only in 1701) prompts a substantial shift in perspective. As the principal philosophical treatise of the early modern period to concern itself with *ingenium*, Descartes’s *Regulae* merits a privileged place in any account of ingenuity in early modern Europe. The project’s Senior Research Fellow will guide the team’s research on the newly found draft of this treatise and will produce a full scholarly edition, superseding all existing editions of the *Regulae*. It is well known that Descartes elaborated a particularly distinctive philosophy of mind, which insisted on the categorical separation of mind from body; that is, of mental substance (*res cogitans*) from corporeal substance (*res extensa*). Hitherto, this doctrine of substance dualism (as it is sometimes termed) has appeared to be as present in the early *Regulae* as it is in the *Meditationes de prima philosophia* (‘Meditations on First Philosophy’, 1641). What emerges very strikingly from the early draft of the *Regulae*, however, is that Descartes’s preoccupation with the separation of mind from body, and specifically of the intellect from the other sources of knowledge, is quite absent. The Descartes of this new early draft was not yet a thoroughgoing dualist. Thus, the project’s research will contribute very directly to enlarging our understanding of the place of the ingenious faculty in early modern philosophy and, in the specific hands of

Descartes the mechanical philosopher, to *ingenium* as a power of mathematical and ultimately of mechanical intelligence.

The project's work on natural philosophical treatments of ingenuity will be undertaken in relation to research on its position within artistic theory. Connections between these two fields have certainly been made before, but thus far largely in the context of discrete topics within the history of *ingenium*. By placing artistic theory in conversation with natural philosophy the project will grapple with the argument that early modern artists laid claim to the ingenious aspects of the mental faculties – fantasy especially – as their own special province.

It is remarkable that in his almost five-hundred-page account of Renaissance ingenuity, Brann devotes fewer than twenty pages to the visual arts. This derives, perhaps, from the mistaken assumption that the subject has been exhausted by Panofsky, Saxl and Klibansky's enormously influential study of genius and melancholy in the arts, to which we may add the Wittkowers' study of artistic temperament (Panofsky, Saxl, Klibansky, 1963; Wittkower and Wittkower, 1963). Certainly, as Britton recently observed, thanks to these works 'melancholia has become one of the warhorses of sixteenth-century art history' (Britton, 2003), but this is largely the case only for northern art of the period, especially the work of Dürer, whose *Melencolia I* has been comprehensively studied within the contexts of Renaissance theology and philosophy (Panofsky and Saxl, 1923; Schuster, 1991). The project will address the pressing question of how the Saturnine persona was treated theoretically elsewhere: in French theory, for instance, or in England in the later seventeenth and early eighteenth century.

Alongside the foundational texts cited above, important contributions to the study of ingenuity in Italian artistic theory have been made by Summers and Emison, who have touched upon *ingegno* in the terms of art used by and associated with Michelangelo, especially his apotheosis as a 'divine' artist (Summers, 1981 and 1987; Emison, 2004). Kemp has studied the connection between genius and invention in fifteenth-century writings, the importance of ingenuity in the genesis of notions of individual style, and the role of 'genius' in the creation of the so-called 'super artist' of the Renaissance (Kemp, 1977, 1987, 1989). The significance of ingenuity in theories of literary inspiration – most notably the revival of the *furor poeticus* by Italian humanists, its evolution in literary academies of the sixteenth century, and its eventual transformation into the *esprit* of salon culture – is well attested (Galand-Hallyn, Hallyn and Lecoite, 1995; Bernier, 2001). The project need not revisit the more well-trodden parts of this terrain, particularly the importance of theories of poetic ingenuity for the *Pléiade* (although this will serve as an important context for work on the visual culture of inspiration). Rather, attention will be trained on areas of artistic theory that beg a fuller treatment: for instance, ingenuity's impact on theories of *disegno* (suggested in Williams, 1997); the need to restrain ingenuity for the purposes of decorum or 'taste' (abundantly evident in writing from Zuccaro to Shaftesbury); and the relationship between ingenuity and enthusiasm, a topic of major importance for De Piles.

Perhaps the most productive work in recent years has been on the still under-explored field of theories of imagination pertaining to artistic creativity. Thanks to the astute work of Swan we are starting to learn more about the Netherlandish context at the turn of the seventeenth century as well as, more broadly, the relationship between theories of imagination and demonology in the visual sphere (Swan, 2003, 2005). Yet despite such studies we remain ill-informed about the trajectories of concepts such as 'spirit' and *geest* in the visual arts. In his *Schilder-boek* (1604), Karel van Mander used the term *geest* to refer to certain types of pictorial subject matter that 'must be pictured *uyt den gheest*, since they are either too fleeting or too multifarious to be captured *nae t'leven*' (Miedema, 1981; Melion, 1992). These, then, are parts of a painting in which *esprit*-as-character, close even, perhaps, to *esprit*-as-individual-style or the *non-so-che* of Italian artistic theory, may be observed. The PI's monograph on ingenuity in early modern Antwerp will pursue this important theme, building on his account of the connections between *geest*, *ingenium* and the celebration of Flemish style in the Willem II van Haecht's *Gallery of Cornelis van der Geest* (1628): a work organised around the conceit of 'lively esprit', as its motto suggests (Marr, 2013[A] and Figure 1, below).



Willem van Haecht II, *The Gallery of Cornelis van der Geest* (1628), detail. Rubenshuis, Antwerp.

Within the broad domains outlined above, the project will examine also subjects such as theories of artistic fantasy and ingenuity as the root of creative intelligence. It will trace the connections between ingenuity and ‘neighbouring’ concepts such as curiosity and wonder and invention (Evans and Marr, 2006). Particular attention will be paid to the distinctiveness of regional traditions and the means by which theories of ingenuity were transmitted across Europe.

Where Strand 2 explores the conceptual landscape of ingenuity, Strand 3 examines the material contexts in which it lived. The project will study how ingenuity was embodied, paraded and shaped by artists and craftsmen. Recent research has begun to make possible a fresh history of the material life of ingenuity as it pertains to craft skill and the cunning manipulation of matter, particularly in relation to the *subtilitas* of natural essences (Göttler and Neuber, 2008). Building on Baxandall’s suggestive hypotheses about the nature of craft knowledge, research from Pamela Smith’s work on ‘artisan epistemology’ to Michael Cole’s illuminating account of the ‘demonic’ aspects of sculpture has pointed the way towards a new history of artisanal processes (Baxandall, 1980; Cole, 1999, 2002[A] and [B]; Smith, 2004). In particular, work on the history of alchemy and artisanship has proposed potentially fruitful avenues to explore, in terms of the ‘chymistry’ of pigments, casting processes and the ‘tempering’ of tools used in hardstone carving (Newman, 2004; Butters, 1996). Scholars working at the intersection of the history of art and science have begun to capitalise on these insights. For instance, Klein and Spary’s recent volume on materials and expertise in early modern Europe represents a particularly important recent contribution, in which Klein’s account of the production of ethers holds particular relevance for the present project, given the unambiguous association of such substances with ‘spirits’ (Klein and Spary, 2010; Klein, 2010). Expanding on this type of work, the project will pursue the bodily and mental regimes required to control the ‘liveliness’ or *esprit vif* of challenging materials, revealing especially the sensual qualities of ingenuity in the workshop.

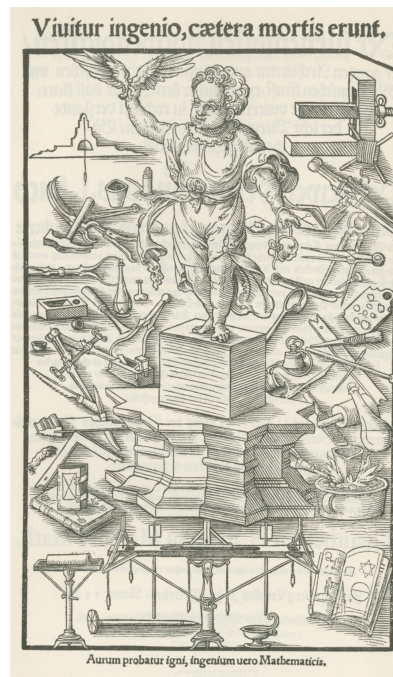
As Baxandall noted in his chiromantic account of limewood, in Renaissance Germany certain materials were thought to have their own ‘character’, which it was the artisan’s job skillfully to coax out. (This may perhaps be compared, in the Italian context, to Michelangelo’s platonic conviction that specific blocks of marble were pregnant with pre-existing form.) Yet the very evident relationship of this trope with the widespread period interest in the artist’s temperament – specifically his genius persona – has not been made (Steptoe, 1998). The project will thus explore this underappreciated connection, seeking to comprehend how it was that materials themselves came to be thought of as ‘ingenious’, in a similar manner to the artisans who used them. This will entail a thorough examination of how ingenuity played out in specific types of natural matter, such as wood, stone, metal and the sands used in ceramic manufacture and glassblowing. Notably, the early modern period witnessed an explosion of new – or at the very least newly perfected – techniques for manipulating such materials in ingenious ways. Examples include the life-casting techniques of Palissy and Jamnitzer, or the rock-crystal and hardstone carving methods of the Miseroni and Tadda. Focusing attention of practices of this kind, the project will assess in detail the cunning knowledge employed in manufacturing, investigating how and why certain techniques, skills and professions came to exemplify the ‘mindful hand’ (Roberts, Schaffer and Dear, 2007).

How, though, were ingenious processes transmitted? How were they codified, regulated, usurped and copied? Building on William Eamon's work on the 'secrets' tradition (Eamon, 1994) Strand 3 will investigate the complex intersections of 'tacit' and explicit knowledge as it circulated in books of secrets, manuscript recipes, how-to books and the all-important context of demonstration in the workshop, notably through apprenticeship (Lukehart, 1993). Scholars such as Sven Dupré have started to make important inroads into this topic (<http://www.mpiwg-berlin.mpg.de/en/research/projects/MRGdupre>), but we need to know more – as Bredekamp has argued (Bredekamp, 1995) – about the movements of ingenious know-how as it shuttled between the workshop, the study, the *Kunstammer* and the salon (Clark and Dupré, 2012). Much work remains to be done, moreover, on how cunning knowledge's codification and publication led to attempts to regulate it. The 'inventive' aspects of ingenuity were inextricably bound up with the emergent patent system, yet a notable quality of many early modern artisans was a disingenuous willingness to plagiarize and copy indiscriminately (Bjørnstad, 2008; Marr, 2013[B]).

If our current understanding of the transmission of ingenious knowledge is unsatisfactory, the history of ingenuity's depiction is even more so. Remarkably, the representation of ingenuity in the early modern period has never before received a full scholarly treatment. Thus, in Strand 4 the project will investigate the visual culture of ingenuity as manifested in paintings, prints, drawings, sculptures and the applied arts. It will assess the depiction of themes such as inspiration, enchantment and the mythological origins of creativity, exploring the allegorical devices and figural tropes invented and exchanged by artists and their patrons.

Of particular importance will be a full study of the iconography of ingenuity in the early modern period. To date, this has been concentrated almost exclusively on the imagery of 'genial melancholy', in particular Dürer's *Melencolia I* (Panofsky, Saxl, Klibansky, 1963; Schuster, 1991). There is, however, ample scope to investigate genial melancholy in other places and periods. How, for instance, was it approached in France, from the languorous work of Jean Cousin, through the disputes of the *Académie royale de peinture et de sculpture*, to its revival by Watteau in the form of the *fête galante*? What was its impact on the visual culture of Renaissance England, where the melancholic courtier became a popular type of portrait miniature? What (drawing on fascinating recent insights; Bok, 2009) were its fortunes in Netherlandish visual culture, especially in relation to the cultivation of fashionable *lossigheyt* (carelessness)? Even in relation to Dürer and the German tradition there remains scope for new discoveries. For example, in a recent article the PI has shown how Peter Flötner's woodcut for the treatises of polymath Walther Ryff refashioned aspects of *Melencolia I*, combining its attributes with figurative elements of the emblem 'poverty hinders *ingenium*' and the motto of Dürer's engraved portrait of Pirckheimer (Marr, 2013; Figure 2, below).

Beyond melancholy, the visual history of ingenuity has been treated only fragmentally. In a brilliantly interdisciplinary account, Fehrenbach has revealed the complex web of connections between inspiration, light and the divine in Baroque Italy (Fehrenbach, 2005). The Italian Renaissance imagery of inspiration – including its erotics – has been investigated effectively by Ruvoldt (Ruvoldt, 2004) but aside from a handful of articles (the most important of which is Davis's account of Rubens' images of Bacchic creativity; Davis, 2004), its northern fortunes have received scant attention. Rather more fully studied is the theme of ingenuity as enchantment, in particular scenes of witchcraft and sorcery (Schade, 1983; Hults, 2005), the *stregozzo* (procession to the witches' sabbath) and its connection to *bizzarria* (Emison, 1999). Important work by Fermor, Emison and Campino has begun to trace the significance of ingenuity for the emergence of 'caprice' as a visual conceit and concept in the Renaissance (Fermor, 1993; Emison, 1998; Campione, 2011), but surprisingly limited research has been undertaken on the iconography of the 'spirito' figure, although Dempsey has traced its appearance in the work of Donatello (Dempsey, 1996). Likewise, beyond one or two short accounts, emblematic images of *ingenium* have yet to be studied in any detail (Bialostocki, 1989; Höltgen, 1998). Clearly, then, a full account of the imagery of ingenuity is long overdue. Even topics that we might expect to have received sustained scrutiny – the *genius loci*, for example – remain open for investigation. Despite important work on this subject, notably in relation to sixteenth-century German landscape, patriotism and national identity, the significance of this ancient topos has yet to be fully appreciated or explicated (Silver, 1983; Wood, 1993).



Peter Flötner, 'Vivitur ingenio' (ca. 1540). Cambridge University Library.

Yet ingenuity's visual life did not reside solely in its representations. It surfaced also in artefacts which were considered, by their very nature, to be ingenious. Exemplary in this regard are the mechanical contrivances of the period's mechanicians, such as perpetual motion machines or automata, the thaumaturgic movements of which demonstrated that ancient *metis* was alive and well in the early modern era (Marr, 2004). Within this context an important figure is the early modern artist-engineer, whose professional title reflected the mechanician's association with *engin* (Vérin, 1993). The profusion of connections between ingenuity, the culture of machines and instruments, the mechanical philosophy and the world of visual artists has been hinted at (Shapin and Schaffer, 1985; Bennett, 2006; Sawday, 2007), but their major implications for how we understand the relationship between art and science in the early modern period have yet to be unpacked. In studying them closely, the project will establish the ways in which the international artisanal and scientific community changed ingenuity's shape, unpicking in particular the knotted relationship of *ingenium* to 'banausic' intellect. But in order to capture this type of ingenuity, we must examine also images that sit at the intersection of wit, inventiveness and caprice, such as the optical games of anamorphic art, 'jokes of nature' and magic lantern shows (Baltrusaitis, 1977; Findlen, 1990; Dupré, 2008). As Kaufmann has shown, ingenious visual jokes were taken seriously in the early modern period, not only for their sophistication but also for their troubling power to confound, blurring the distinction between truth and artifice (Kaufmann, 2010). Delving deeply into this genre, the project will reveal the profound ambivalence of early modern ingenuity: the celebration of subtle visual trickery as the acme of artistic *virtù* and the simultaneous anxiety about its dangerous associations with deceit and delusion (Clark, 2007; Gregory and Hickson, 2011). Thus, Strand 4 will not only make a major contribution to the visual history of ingenuity, it will also begin to unravel the conundrum of early modern disingenuousness.

It will be clear from the above account of the field that the project sits at the intersection of history of art, intellectual and social history, history of science, technology and medicine, literary studies and modern languages. As such, only a collaborative, interdisciplinary project can possibly hope to make the connections between topics and across periods that will serve to create a new, hybrid history of ingenuity in early modern art and science. *Genius before Romanticism* will subject early modern ingenuity to a totally new kind of scrutiny, bringing together for the first time the study of ingenuity's language, concepts, processes, and visual and material culture. It will move the prehistory of genius away from its tired obsession with a handful of 'great artists', demonstrating the extent to which ingenuity was at the very heart of what it meant to be early modern.

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