

## Chapter 8 Conclusion

*... if we showed them how to do something, this precision itself seemed to hold their interest. To have a real purpose to which the action was directed, this was the first condition, but the exact way of doing it acted like a support which rendered the child stable in his efforts, and therefore brought him to make progress in his development. Order and precision, we found, were keys to spontaneous work in the school (Montessori 1982 [1949], p. 161).*

### 8.1 Re-viewing a Montessori classroom

To conclude, let us again picture a Montessori classroom, with its open shelves displaying sets of Montessori objects. At the centre of the picture are children attentively using the objects, with a teacher, as unobtrusively and sparingly as possible, presenting and intervening to enhance the order and precision of the children's efforts. At the conclusion of this study, how do we now interpret this picture?

First, we recognise the provenance of the Montessori objects and their use, a provenance stretching back to seventeenth-century Europe, set against the background of an Aristotelian world view. The foundational Aristotelian opposition between the physical and non-physical is echoed in relations embodied in the objects and their use, including relations between form and function, actual use and potential knowledge, matter (substance/objects) and energy (process/movement). As we have seen, this opposition even appears in the detail of the Montessori grammatics in the contrast between noun and verb.

Investigating more closely, we see an Aristotelian emphasis on sensory, empirical experience as the foundation of educational knowledge, and on reason as the foundation of harmonious social relations. The teacher's presentations of how to use the objects, and how to enact reasoned social relations, represent intellectual and social 'final causes', or ideal forms, towards which the children are working.

Along with Montessori's earliest critic (Boyd 1914), we also recognise the Enlightenment origins of Montessori pedagogy, organised according to the three divisions of the sciences proposed by John Locke. First, there is *knowledge*, with its

origins in empirical experience. Second, there is *language*, the instrument of knowledge, with its capacity to capture and connect abstract ideas, and, finally, at the limits of knowledge, there is a reason-based *ethics*. Under the influence of Locke, and his rejection of innate understanding, we see the Montessori objects capturing children's attention and leaving clear and lasting 'impressions', impressions which become material for reflection, and the foundation of memory, intellect, judgement and reason.

At this point in our interpretation, however, there is, fittingly, a choice to be made. The choice relates to how we interpret the way Montessori appropriated Enlightenment ideas into her pedagogy, especially her emphasis on the role of liberty.

As we have seen, Montessori's contemporaries (Boyd 1914, Dewey and Dewey 1915, Kilpatrick 1915, Piaget 1970) critique her pedagogy from within the tradition of Rousseau, a tradition which aligns liberty in education to 'sentiment' and innate dispositions, elaborated by Piaget as maturing mental structures. From this perspective, Montessori pedagogy is variously judged as being innovative and intuitive, outdated and mystical. To sidestep these contradictory conclusions, I have argued in this study that the provenance of Montessori's emphasis on liberty, and the design of the Montessori objects, is more productively traced to Rousseau's contemporary, Condillac. Montessori, herself, draws our attention to this provenance by crediting, as the source of her inspiration, the nineteenth century French doctors, Itard and Séguin, both of whom developed, in the tradition of Condillac, pedagogy for developmentally-impaired children.

Shifting our interpretive stance to the Condillac tradition foregrounds the sensory contrasts which are such a conspicuous design feature of the Montessori objects. We begin to see a developmentally-significant relation between children's exploration of these contrasts in freely-chosen activity, and language, which renders the contrasts socially meaningful and worthy of attention. We become aware of a complex interplay of relations between externally-oriented sensory (material) experience, internally-oriented semiotic (social) experience, and the development of consciousness. This complex picture, however, poses a significant challenge if we are to continue our interpretive work. To address this challenge, a meta-analytic

framework has been used in this study. This framework comprises three complementary analytical strands.

The first component of the framework is Vygotsky's account of the evolution of a child's consciousness from external practical action fused with sign use to internalised thought. A Vygotskian interpretation of the Montessori objects and their use is relevant for many reasons, not least because of their shared intellectual heritage and interests, including Séguin's luminous pedagogy. A Vygotskian interpretation portrays the Montessori objects as external mediational means, which, when conflated with sign use, have the potential to re-organise a child's natural, unconscious and unregulated functions of perception, attention and memory, so these functions become integrated and voluntary in socioculturally logical and purposeful ways. Furthermore, this component of the framework reveals that Montessori and Vygotsky share a future-oriented, sociogenetic view of development. Montessori's teleological conception of finality (ontogenesis oriented towards an unspecifiable future potential) gains coherence when interpreted, in Vygotsky's terms, as semiotic mediation (ontogenesis mediated by meaning potential). An exploration of the mediational qualities of the Montessori objects in terms of meaning potential requires an expansive semiotic analysis, an analysis enabled in this study by using social semiotic theory as the central component of the meta-analytic framework.

The multiple dimensions of social semiotics allow us first to interpret the use of the Montessori objects in terms of meaning potential (semantics), and, second, to describe how this meaning potential is organised in terms of lexicogrammar, and expressed multimodally in ensembles of educational resources (objects, movement and language). Complementary semantic and lexicogrammatical analyses reveal how Montessori pedagogy weaves these multimodal ensembles into units of meaning-making potential, or text types. These analyses capture the semiotic intricacy of the design of the objects and their choreographed use. In summary, the analyses capture how redundant multiple representations in each ensemble draw children's attention to the key meaning relations of a quantum of educational knowledge. These representations accumulate enough semiotic 'weight' to leave a semantic 'impression', or contour, which orients children towards successful engagement with the same knowledge in future educational contexts.

To further our interpretation of a Montessori classroom, the third component of the analytic framework, Bernstein's pedagogic device, allows us to explore the relation between ensembles of Montessori educational resources and the cultural knowledge they encode. This is achieved on the basis of three principles.

The first principle enables us to see the origin of the Montessori curriculum in knowledge categories established in medieval European universities, in particular the distinction between everyday knowledge and educational knowledge, and the contrast between linguistic knowledge and abstract scientific and mathematical knowledge.

The second principle reveals how Montessori assumed, as she selected the content of her curriculum, that young children of all social backgrounds, including those with significant developmental barriers, have the capacity to access and, even control, the academic knowledge of European culture. The instructional discourse of Montessori's pedagogy recontextualises manual, expressive and academic knowledge into instructional pathways. These pathways are initiated by modelling to children everyday manual and expressive skills, and lead to the mastery of systematic, hierarchically-organised academic knowledge. The progression from concrete experience to abstract principles is generalised across all areas of the Montessori curriculum. Alongside this progression, control of the regulative discourse of Montessori pedagogy is progressively handed over from teacher to child as the child's knowledge and self-mastery increases.

The third principle of Bernstein's pedagogic device enables us to interpret the instructional detail which guides Montessori practice as constituting a visible pedagogy, in which both educational content and social relations are explicitly specified in terms which are transparent and accessible to children at each developmental stage.

In summary, the three analytic components - Vygotsky's genetic account of development, Halliday's social semiotics and Bernstein's pedagogic device - enable us to interpret the child's liberty in a Montessori classroom, not as an expression of unmediated innate drives, but as freedom gained by interacting, in developmentally appropriate ways, with communally-shared socio-cultural meanings. This is achieved by providing young children with objects they can use as external mediational means,

objects which capture and regulate attention. The use of these objects conflates sensory allure with a semiotic intricacy capable of encoding educationally durable meanings.

## **8.2 Directions for future research beyond the study**

The scope of this study limits our interpretation to a view of Montessori pedagogy as *potential* only. Furthermore, the scope of the study has been necessarily limited to a small sample of the pedagogy. Directions for future research suggested by this study, therefore, include investigations of how Montessori pedagogy is, or might be, actualised most effectively in practice, as well as more comprehensive accounts of the way specific educational disciplines, including mathematics, history, science and geography, have been instantiated in the Montessori curriculum. To explore the actualisation of the potential represented by Montessori pedagogy, the analytical approaches presented in this study can be applied in three ways. First, they can be used to evaluate, and enhance, the effectiveness of specific Montessori classrooms, that is, specific instances in which practitioners work to realise the potential of Montessori pedagogy. Second, they can be used to explore ways in which Montessori principles might fruitfully be adapted to enhance practice in other educational contexts. Finally, and perhaps most ambitiously, it might be possible to use these approaches to explicate key semiotic principles in the design of the Montessori materials which would enable new, powerful knowledge to be instantiated in new educational materials, possibly in quite different material forms, including electronic media.

This study's exploration of the potential represented by Montessori pedagogy has revealed the meticulous detail so characteristic of the design of the Montessori objects and the manner of their use. This aspect of the Montessori tradition, handed on painstakingly from one generation of practitioners to the next, embodies a highly coded and unified theory of practice, a theory arguably more explicit and systematic than that offered in other teacher training contexts. The Montessori theory of practice has been, in my own experience, a much more effective educational tool than the eclectic appropriation of incomplete, implied and contradictory theoretical fragments

which has too often constituted pre-service teacher training since Montessori's time. Nevertheless, the Montessori tradition lacks a framework for investigating, generalising and testing the principles on which the pedagogy is built. The meta-analytic framework used in this study represents a first step in the investigation and generalisation of these principles, as well as a potential means for testing their effectiveness in practice.

Observations in Australian, North American and European Montessori classrooms, including my own, have left me with the impression that there is often a gap between the potential of Montessori pedagogy, as explored in this study, and the reality of Montessori practice. Critical evaluations of actual practice from within the Montessori community are often limited to describing the offending classrooms as being either too rigorous an interpretation of the pedagogy or not rigorous enough, leaving teachers in these classrooms feeling they have somehow failed to capture the essence of Montessori's ideas, something which can only be conceptualised in ephemeral and subjective terms. In my opinion, criticism of this type chains Montessori practitioners to the discourses, and limitations, of progressive pedagogy. It isolates individual teachers, leaving them carrying sole responsibility for problems, even those beyond their control, and offers them little in the way of principled guidance towards improving their practice. On the basis of such criticism many Montessori teachers feel they have little option but to search for band-aid, and often incompatible, solutions from outside the pedagogy.

A valuable extension of this study, therefore, would be to design a tool Montessori educators could use to evaluate their practice. Such a tool should be both evidence-based and theoretically-compatible, allowing practitioners to reflect on how the potential of Montessori pedagogy might be exploited more fully and more effectively in particular contexts of use and including a means for assessing student progress within a Montessori setting. The achievement of this goal would require the development of a practical methodology for collecting and analysing data from Montessori classrooms across all semiotic modes and across all three stages of the Montessori ensemble; that is, the teacher's presentation of a quantum of knowledge materialised as objects, the child's independent use of the objects and the independent extension of the child's use of the knowledge to other contexts of use, including those beyond the immediate sensory field. An analysis of these data would need to reveal how, and whether, a child's interaction

with the objects is later transformed into a higher order consciousness of the meanings encoded in the interaction.

A further extension of the study would be to explore ways in which design principles derived from Montessori pedagogy, specifically the design of Montessori objects and their use, might be adapted to assist educators working in non-Montessori contexts. The design of the Montessori objects embodies critical abstractions with the potential to put academic knowledge within young children's grasp, even those children who, in other educational contexts, experience social and developmental obstacles to learning. On the basis of this study, the key design principle appears to be the redundant representation, across multiple semiotic modes, of critical meaning relations encoding quanta of educational knowledge, which give children freedom to interact playfully, yet purposefully, with these representations. As children progressively abandon the redundant material coding, the accompanying linguistic meanings are transformed from context-dependant signals to symbols transportable to other educational contexts. This design principle has been exemplified, in this study, in two areas of the Montessori curriculum: the study of geometry, and its use as a means for developing abstract classification and reasoning skills, and the study of grammar, and its use as a means for developing literacy skills. Further investigation of this design principle may prove a valuable line of enquiry, especially for those educators concerned with developing visible pedagogies which promote equitable educational outcomes for all students, regardless of their socio-cultural or developmental starting point.

### **8.3 Letting the Montessori objects go**

The topic of this study has been the Montessori objects and their use. As the study was drawing to a conclusion, I spoke informally to Montessori colleagues, asking them what they found most rewarding about their work. One colleague thought about this for a while and then finally commented: 'Do you know what I really *love best* about Montessori teaching?' She then described the thrill she experiences whenever a child rushes up, bubbling over with excitement, to tell her: 'I did it all by myself - *and I didn't even need the materials.*'

Montessori children and their teachers call this experience ‘letting the materials go’. It represents the successful conclusion of their collaborative work in one particular area of the curriculum. In Montessori terms, it is the ‘third period’ of a developmental pathway, or passage to abstraction.

That the rewards of Montessori pedagogy are experienced when letting the objects go highlights the work the objects do, mediating between the material and the semiotic to liberate the child’s meaning-making from the immediate sensory field. Presenting the Montessori objects as mediational means carving out educationally valuable, and liberating, microgenetic pathways has been the task of this study. Unlike the child in my colleague’s anecdote, however, I cannot claim to have completed a cycle of work to the point where I can do it ‘all by myself’. In fact, the best I can claim is that the study represents a first period presentation which makes visible to a non-Montessori audience the developmental potential of the Montessori objects, a presentation illustrated by some second period explorations of this potential. In order to reach this point, I have needed the assistance of some powerful analytical tools, a testament to the depth and complexity of Montessori’s enduring contribution to pedagogy.

The celebration of the centenary of Montessori pedagogy in 2007 is evidence that, despite intermittent waves of misinterpretation, indifference, and even hostility, the Montessori legacy has qualities which defy obsolescence. The most worthwhile outcome of this study would be to convince educators in general, and those concerned with the design of pedagogy in particular, that we are not yet ready to let the Montessori objects go because we have not yet learned everything these remarkable objects have to teach us.