Chapter 15
Distilling Dart: Minding Bodily Approaches to Performance Through a Framework for Integration and the Alexander Technique

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Introduction

The Dart Procedures are a developmental movement sequence born from scientific, somatic, therapeutic, and dance histories advanced by anatomist and anthropologist Raymond Dart and Alexander Technique teachers Joan and Alex Murray [1]. Located primarily in Alexander Technique and dance practices, the Dart Procedures "devolve" the mover in a reverse evolutionary sequence from standing, to anthropoidal postures such as creeping and crouching, eventually returning to standing [1–3] (Fig. 15.1). Applied concepts from this sequence deepen bodily awareness and call attention to habits and interferences in coordination across all manner of performance disciplines. It is crucial for performing artists to understand the physical and mental habits that interfere with their technical and artistic achievement.

Since as a physical practice, the Dart Procedures have remained mainly in the context of the Alexander Technique, the benefits of that century-old educational method permeate and are perhaps even amplified in their doing. This is relevant for performing artists in particular as F.M. Alexander's eponymous technique was born from his struggles with vocal failure in theater performance [4]. Many prominent arts training institutions and practices are aware of the benefits of the Alexander Technique and look to it as a method for addressing physical and mental stress habits that impede technical and aesthetic freedom [5]. The Juilliard School offers a range of courses in the Alexander Technique in dance, music, and theater; first-year dance students are required to take the introductory course [6–8]. Multiple studies suggest that, practiced regularly or even in a limited series of lessons, the Alexander Technique significantly reduces neck and lower back pain, may improve respiratory function and body use, and gives performers psychophysical skills to cope better

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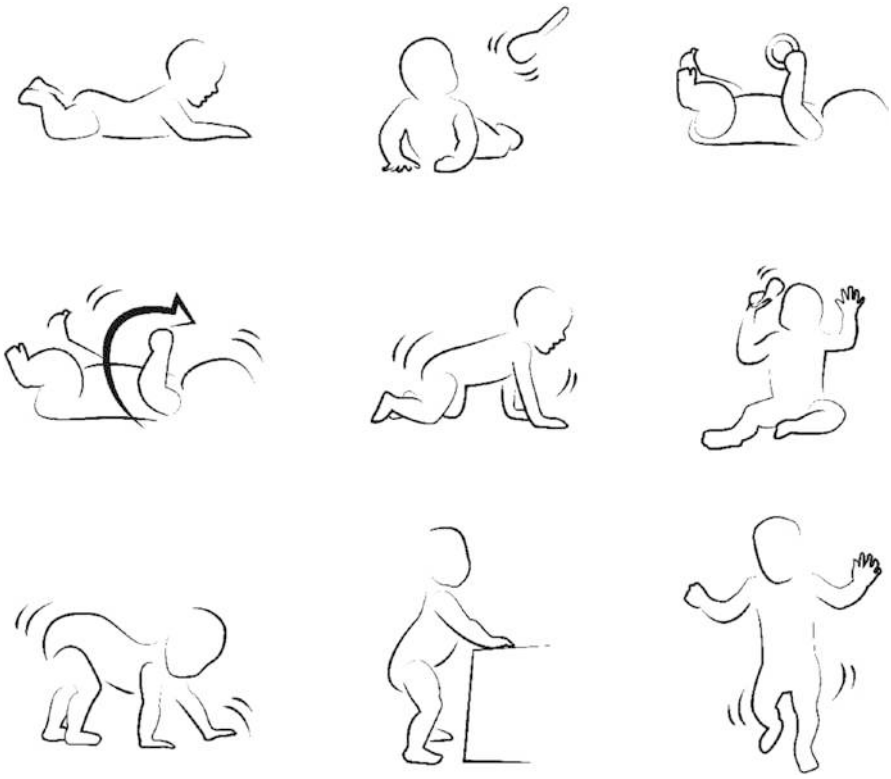

Fig. 15.1 Ontogenetic: Toddler milestones and motor development during the first year. (Source: Jennylipet/Shutterstock.com)

with performance anxiety [4, 5, 9]. As an outgrowth of those underlying benefits, exploring the Dart Procedures and the subsequently distilled Framework for Integration concepts can help performers of all backgrounds to become more aware and coordinated and to adopt new practices that facilitate ease in performance.

Raymond Dart

In order to understand the story of the Dart Procedures and their importance in the canon of developmental movement, it is important to know a little more about Raymond Dart. Australian born in 1893 and educated in London, Dart was a paleo-anthropologist, neuroanatomist, doctor, and educator [1]. By 1922, at the young age of 29, he was already Chair of the Anatomy Department at the University of Witwatersrand in Johannesburg, South Africa [10]. He stayed at the University of South Africa and eventually served as Dean until 1958. As quoted by Nettl-Fiol and Vanier, his paleontological claim to fame was the 1924 discovery of *Australopithecus*

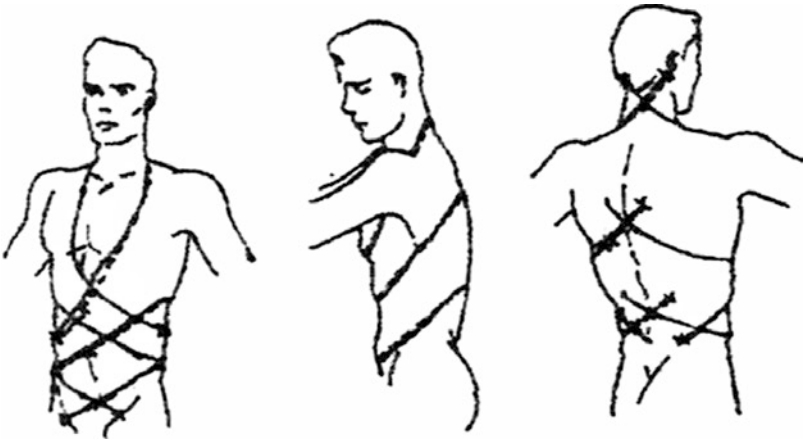

Fig. 15.2 Dart's spiral musculature as featured in 1968 Institutes for the Achievement of Human Potential (IAHP). (Photo permission: Alex Murray)

africanus, the "missing link" or Taung Child [1]. In his book, *Adventures with the Missing Link*, Dart said the Taung Child was a new species marking the evolution between our primate ancestors and modern humans evidenced in postural and other physical attributes [1, 10]. Also germane to the development of the Dart Procedures was his identification of the double spiral arrangement of the human musculature [2] (Fig. 15.2).

The procedures' story entered into personal and therapeutic territory when Dart sought out Alexander Technique lessons from Irene Tasker, a well-known teacher who worked in South Africa from 1935 to 1944 [11]. For 2 years, Dart employed Tasker (who had studied extensively with both F.M. Alexander and Maria Montessori) to work with his son Galen, born prematurely and suffering cyanotic episodes that left him brain injured/spastic [1, 11]. Dart later moved to Philadelphia to serve as a professor at the Institutes for the Achievement of Human Potential (IAHP), dedicated to the rehabilitation and treatment of brain-injured children [1, 10]. The IAHP was originally established by physical therapist Glenn Doman and educational psychologist Carl Delacato and drew on the ideas of Temple Fay, neurosurgeon and head of neurosurgery at Temple University [1, 10].

Still resonant in the movements in the Dart Procedures is Fay's idea that the infant brain develops—as does the evolution of the human species—through stages that mirror those of fish, reptiles, and mammals, until finally recognizably human [1]. These ideas originate with German bio-geneticist Ernst Haeckel's 1866 biogenetic law: "the stages an animal embryo undergoes during development are a chronological replay of that species' past evolutionary forms" or "ontogeny recapitulates phylogeny" [12]. The idea that human development directly echoes the phylogenetic past has been debunked by modern science, but the pioneers of developmental movement (Dart, Irmgard Bartenieff, Bonnie Bainbridge Cohen, etc.) explored deeply how strongly human ontogeny still bears resemblance to so much of that

evolutionary and phylogenetic history (e.g., moving through development from crawling to walking, babies embody similar crawling patterns to reptiles) [13].

Dart's Collaboration with Alex and Joan Murray

Raymond Dart experienced an in-person lesson with the founder of the Alexander Technique (AT), F.M. Alexander [11]. From that experience forward, he remained a lifelong enthusiast of the technique and over years, worked in continued collaboration with other teachers. First-generation British Alexander Technique teacher, Walter Carrington, trained AT teachers Alex and Joan Murray [1, 2]. Upon his suggestion, Alex read Dart's article *The Postural Aspect of Malocclusion* and discovered that Dart delineated postures very similar to those in the Alexander Technique [1, 2]. Murray began a process of embodying them as exactly as possible, with wife and fellow teacher Joan organizing the in-between transitions and movement sequencing [1]. In 1967, Dart and the Murrays established contact and began a dynamic partnership that would bear significant fruit over the next 6 years. Integrated into this continuing work was Joan's embodied knowledge as a professional dancer, her experience of her infant daughter's developmental stages, and her cumulative observations of all the babies brought to the Alexander Technique teacher-training course in which she and Alex taught for five decades [1, 2]. The formal outcome of Dart and the Murray's rich association has become known as a developmental movement sequence called the Dart Procedures.

The Dart Procedures

In *Dance and the Alexander Technique: Exploring the Missing Link,* the authors emphasize that the Murrays believed, "The 'procedures' themselves are merely a starting point for investigation, rather than being a fixed idea or sequence" and "… in hindsight, the Murrays would have preferred the term 'process'" … "because evolution and child development are processes, and so is the Alexander Technique" [1, p.31]. To encapsulate, "The Dart Procedures contain a series of positions that, when linked, become a movement sequence that retraces the path of developmental and evolutionary patterns" [1, p.32]. It is important to emphasize that because the Murrays were working from the perspective of applying Alexander Technique principles, learning or performing the sequence is only a first step in recognizing movement patterns; the ultimate importance would be attending to what Alexander called psychophysical use [1, 2]. As with many developmental and repatterning sequences, the Dart Procedures reveal to the mover habits, movement preferences (especially in spinal patterning), interferences in simple coordination, challenges to range of motion, etc.

Dart Procedures Sequence

The Dart Procedures sequence that emerged from the Dart–Murray collaboration featured in their book [1, 2] as well as online [3] is generally performed in the order shown here, but it can be started, finished, or explored more fully at any point.

1. *Standing on toes*: Mover rises to toes facing the back of a chair—from here will descend all the way to the floor in a devolution from mammalian, to reptilian, to fishlike movements [1, 2, 3].
2. *Shallow monkey position*: Facing back of a chair and sometimes assisted, the mover bends hips and knees toward a very shallow squat and slightly inclined over the chair. The Alexander Technique uses this posture quite a lot; it is often called a position of "mechanical advantage" [2, p.163].
3. *Hands on the back of the chair*: In the shallow squat, the mover grasps the back of the chair with the long fingers and thumbs.
4. *Anthropoidal*: The mover places knuckles on the back of the chair while maintaining the inclined squat position.
5. *Deeper anthropoidal*: The chair is turned around to face the mover who then descends into a deeper squat with knuckles on chair seat.
6. *Tarsoid*: The mover descends into an even deeper squat until back of the hands to wrists rest on the chair seat.
7. *Anthropoidal*: The chair is moved away, and mover bends into deepest squat resting knuckles on floor with hips up—this is a very gorilla/primate-like posture.
8. *Creeping-quadrupedal*: The mover descends to all fours in a table top on hands and knees.
9. *Kowtow*: The mover sits back onto heels, bending into deep flexion of the torso, hips, and knees with a rounded back as in the yoga "Child's Pose."
10. *Pentapodal*: Here there are five points of support touching the floor as the mover rolls to top of the head with the cranial globe, elbows, and knees all touching floor.
11. *Pre-fetal*: In pentapodal, the mover crosses ankles and arms with forearms across upper chest and hands wrapped around the neck.
12. *Fetal crouch*: With assistance, the mover retreats to a full fetal position back toward heels in deepest hip, knee, and spinal flexion.
13. *Rolling to semi-supine*: This step includes spirals in the fetal crouch which entail turning the head to look left and right, while ankles and arms are still crossed. From here, the mover rolls from the fetal crouch all the way to his/her back, while keeping legs and arms crossed.
14. *Rolling to prone*: From back, the mover rolls to belly ending supported by elbows—much like a baby on belly looking up, supported on forearms.
15. *Pull to the elbows*: The mover pulls himself/herself higher onto forearms.
16. *Spiral rolling*: Either alone or with assistance, the mover is encouraged to look over one shoulder so much that he/she ends up rolling to back. Eye tracking is very important in this step.

17. *Ventigrade*: After rolling back to his/her belly, the mover is face down (prone) with arms resting at sides. The mover's vision is no longer stereoscopic but more like a fish—one eye on each side. From here the mover slides arms out to sides and up toward the head all the while moving through alternating pronation/supination of forearms, finishing with arms above the head and back of wrists and hands touching. This is called "fish arms" and echoes the movement of pectoral fins.
18. *Creeping-quadrupedal*: This movement is what most lay people think of as crawling (the accurate developmental term is actually *creeping*. *Crawling* is closer to the floor and at times not yet quadrupedal). The mover is on all fours with opposite upper and lower body limbs propelling him/her through space. The intent is to look for the chair with spatial intent and creep/crawl to it.
19. *Clambering*: Having found the chair, like a toddler pulling to standing from all fours, the mover uses the seat of the chair to pull up back into an inclined squat in this order: hand, hand, foot, foot.
20. *Upright/relevé/on toes*: Pressing off the seat of the chair, the mover swings up to a full standing position. The mover rises on toes once again but this time adding the arms stretched up and overhead. Dart's idea of fully evolved poise is a person balancing on one toe, one leg lifted, spiraled, and arms overhead [1–3].

The Essentials of Performing the Dart Procedures

According to Dart, the fetal curve or what in the procedures is described as the *fetal crouch* is the most important element of the sequence. In an interview for *Dance and the Alexander Technique*, the Murray's recounted that, in his 80s, Dart jumped up on top of a table to demonstrate how it should be done [1]. It bears noting that a paleoanthropologist insisted that this was developmentally the most important and pivotal movement in the sequence [1]. The fetal curve (the rounded prominence of the thoracic and sacral spine) is one of our most formative and primal bodily experiences. In human development, as room in the womb becomes limited by the growing fetus, all late-stage gestational movement pushes away from and returns to this position in preparation for birth [13]. After birth, many cultures traditionally swaddle infants to calm the nervous system and as a gentle transition into the world of larger personal space. Alex Murray surmised that in their initial exchange, Dart had perhaps omitted a description of the fetal curve because to him, it was so obviously ontologically fundamental [2]. Murray classifies fetal, or the *fetal crouch*, as a "total movement" [2, p.170].

From birth, for humans of all ages, the fetal curve is a position with an emphasis toward our original primal spinal flexion that offers rest and relief from habitual muscular pulls (think of *Child's Pose* in yoga practices or curling up on the couch or in bed after a long day). From the "end" of that deep spinal flexion in the sagittal plane, the opposite resultant spinal extension and lengthening are easier and,

according to Joan Murray, a logical developmental progression that moves from introversion to connecting to one's environment [1, 15].

In the Dart Procedures, that bodily progression of extension following flexion relates to another important hallmark of Dart's work: his challenge of traditional Western compartmentalization of human anatomy. Of the body's musculature design, he insisted:

> Man suspends the remainder of his body from his head and spine. He swings his body from his head by means of two spirally arranged but interwoven sheets of voluntary musculature in exactly the same manner that his fishy and amphibian forefathers swung their bodies from their heads… [2, p.90].

These interwoven sheets are what he called the *double spiral* musculature and might be less obvious when witnessed in the bilateral symmetry of a position such as the fetal crouch or in what Bonnie Bainbridge Cohen terms *homologous* movement/patterning (e.g., a "frog leap" with both arms reaching out and then both legs following shortly after) [13]. But, when the double spiral musculature is operative in asymmetry—for example, a swimmer reaching forward with the right arm and turning the head left to take a breath—what is characterized as *spiral* movement is at play.

In the Dart Procedures, after the fetal crouch, the transition to spinal extension is through what Alex Murray refers to as "rotational movement" [2]. *Rolling to semi-supine (*and the later *spiral rolling*) is characterized by looking right and left and then rolling to rest on the back. Murray believes that when this *spiraling* movement is performed slowly and purposefully, the mover can notice habits of obvious strain, breath holding, possible fear of falling, etc. and gently work through all possible challenges to ease [2]. This movement also echoes a baby's experience of being born (in a traditional delivery). The legacy of Dart's double spiral musculature (Fig. 15.2) continues to influence ongoing research in myofascial release work [14], Murray's methods of training Alexander Technique teachers, and Rebecca Nettl–Fiol and Luc Vanier's *Framework for Integration* [1, 15].

Framework for Integration

The recent *Framework for Integration* [15] is a particular distillation of overall bodily attitudes and patterning found in the Dart Procedures. This analytical tool considers spinal patterning in various models. The original "simple" model looks at the head and spine in the sagittal plane to see whether the mover/performer prefers an overall pattern of *primary*—Dart's *fetal crouch* (emphasizing an overall pattern of spinal flexion)—or *secondary* (emphasizing an overall pattern of spinal extension/hyperextension) [15]. These patterns can be analyzed in formal physical training but also in the context of daily activities [1, 15]. It is theorized that when balances of these spinal patterns are less than optimal, over time, chronic pain or injury may occur.

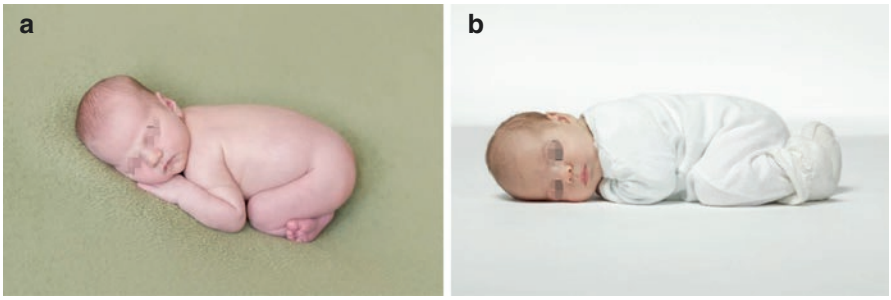

Fig. 15.3 (**a**, **b**) In *primary*, the spinal curves emphasized are the thoracic and sacral. (Source: (**a**) Tatyana Vyc/Shutterstock.com. (**b**) Source: paffy/Shutterstock.com)

Fig. 15.4 In *secondary*, the spinal curves emphasized are the cervical and lumbar. (Source: Monkey Business Images/Shutterstock.com)

As evident in Fig. 15.3a, b, in *primary*, the whole-body patterning tends toward overall flexion of the spine, softening of the limbs toward the midline, and a general body attitude of rest or introversion [15].

In *secondary*, whole-body patterning tends toward overall spinal extension and hyperextension, with the limbs freeing away from the midline and a general body attitude of engagement with the environment or extroversion [15] (Fig. 15.4).

In the simple model of the *Framework for Integration*, the release of one pattern toward the other encourages a recuperative recalibration of the whole called a *reset* [8]. And, though these two generalized patterns are simple and easy to see, most movement is a more complex spiraling of the two according to the body's double spiral musculature [1, 2] (Fig. 15.5). The sequence of a baby rolling shown in Fig. 15.5 illustrates the baby starting from a general *secondary* pattern (spinal extension/hyperextension), turning the head into a spiral, and then rolling in transition to rest on the back—more toward *primary* but also in a recuperative *reset.*

Fig. 15.5 Sequence of a baby rolling. Starting from a general *secondary* pattern (spinal extension/hyperextension), the baby turns the head into a spiral and then rolls in transition to rest on the back—more toward *primary* but also in a recuperative *reset*. (Source: kai keisuke/Shutterstock.com)

Performance Examples

Framework for Integration is, in essence, a movement analysis lens. Because movement is ephemeral and often does not repeat itself identically, practicing seeing the simple model (*primary*, *secondary*, and *spirals*) in still photos develops the confidence needed to recognize the patterns in moving bodies. The patterns are not static shapes but rather point to how the body (or parts of the body) trends toward, away, and through these movement intentions.

In Fig.15.6, each dancer is embodying the oppositional patterning in the simple model of the *Framework for Integration*. The male dancer on the bottom is in a deep, rounded *primary,* while the female dancer on top is in a fully, arched *secondary*.

In Fig. 15.7, from left to right, the dancers are embodying *primary* (toward fetal), *secondary* (full hyperextension), and a *spiral* combination of both (reminiscent of the rolling patterning in Fig. 15.5).

In illustrations less extreme than those of the dancers, the violinist on the left is adopting an overall patterning of *primary*, while the violinist on the right is adopting a patterning that tends more toward *secondary* (Fig. 15.8). In each example, when the performers release their intention of the present activity in which they are pictured, they should, in theory, *reset*. For example, the male dancer in the arched jump in Fig. 15.7 will need to release the extreme arching, so his head and spine can

Fig. 15.6 Dancers embodying the ends of the spectrum of *primary* and *secondary*. (Source: sirtravelalot/Shutterstock.com)

Fig. 15.7 Dancers in clear patterns of Framework for Integration vocabulary: *primary*, *secondary*, and combinations of both in *spirals*. (Source: Master1305/Shutterstock.com; Alones/Shutterstock.com)

Fig. 15.8 Violinists in subtle but overall *primary* (L) and *secondary* (R) patterning. (Source: Voyagerix/Shutterstock.com; Netfalls Remy Musser/Shutterstock.com)

Fig. 15.9 Ballet arabesque with *secondary* patterning. Dancer on left is overly engaged in hyperextension, while dancer on the right has clearer, more efficient *secondary* intention. (Source: Hudson Hintz/unsplash.com; OSTILL is Franck Camhi/Shutterstock.com)

realign vertically, and his feet and legs can reach efficiently toward the floor to land safely. To land well, he must release his *secondary* activity to *reset* more toward *primary*. He will not actively do the opposite of what he is doing in the jump but, rather, will simply let go of the arching to *reset*. All performers in Figs. 15.6, 15.7, and 15.8 are in momentary activities that will change intention and shape according to choreography and composition. If any are caught in one pattern more strongly than the other and are not able to *reset*, unnecessary struggle and muscular tension will hinder efficient and organic movement or playing.

Figure 15.9 is an example of dissonance in patterning. A ballet step called an *arabesque* is an activity that requires extreme range of motion and hyperextension

of the spine—the whole body in a *secondary* and lengthened state. Classical Alexander Technique directions for the head are for it to go "forward and up" in length (length at the base of the skull) as opposed to "back and down" (shortening at the base of the skull) [1]. In the *arabesque* on the left, the overarching in the back (too much *secondary*) is causing the head of the dancer to go backward behind verticality and causing extra tension in the musculature of the neck (the sternocleidomastoid specifically). On the right, as in the baby in Fig. 15.5, the *arabesque* balances the use of the body in hyperextension, features clear upward thrust, and reaches into the forward space.

Tools for Teaching

In his 1992 introduction to Dart's *Skill and Poise,*[1] Alex Murray said of the Dart Procedures:

> …these procedures will not teach one the Alexander Technique, but patient and intelligent investigation by one with no Alexander experience may still lead to a certain enlightenment by revealing inefficient patterns of movement and helping to discard them. Undertaken with the guidance of a skilled Alexander teacher, they are a constant source of insight and a point of reference in one's patterns of behavior. One can continually return to these as to Alexander's 'positions of mechanical advantage' in which category they certainly belong. Dart has often said that '*Man can only look ahead as far as he can look back'*. These patterns take us back to the origins of human movement and open up corresponding vistas for our future as mobile human beings. [2, 11 p.10][1]

The Framework for Integration can help those who train and teach performance practices to identify in their students overall bodily patterning that either supports or interferes with successful practice and performance [15]. Practicing parts or all of the Dart Procedures in tandem with Alexander Technique lessons results in greater bodily awareness and capacity for choice and change. Applying the AT principles of *inhibition*—the practice of non-reactivity/non-doing (much like the aforementioned *reset*)—and *faulty sensory awareness*, which is understanding that feedback from the nervous system may be maladapted or too strongly habituated, the mover can learn to approach the Dart work with ongoing process and patience. Integrating these approaches as central tools in training can facilitate greater bodily awareness, increased efficiency and functionality, and improved technical and aesthetic aspects of performance, thus minimizing overuse and chronic injury.

[1] This quote was originally in the introduction to the 1992 version of *Skill and Poise* which was a limited, self-published booklet presented at the North American Society of Teachers of the Alexander Technique (NASTAT) Annual General Meeting in Chicago in 1992. The subsequent 1996 STAT Books edition does not include this quote [2].

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