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AUTHOR Jolley, Jimi
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ABSTRACT

In preschools caring for infants and toddlers, outdoor play space is often limited and underdeveloped. When outdoor play space is developed, it is usually geared towards older toddlers, and infants' time in this space is often limited. Measures can be taken to give both infants and toddlers access, in safe and appropriate ways, to the valuable experience of outdoor play. Some of these measures include: (1) creating a space in which infants are out of the way of more mobile children; (2) having this space be enclosed by a plexiglass wall and three "activity panels" with varying textures; and (3) catering to children's different developmental levels by using landscaping and physical structures to ensure that children stay in their appropriate spaces. The use of plants, in particular an herb garden, can provide color and aromas which both toddlers and infants can experience. Playing in a safe, active environment can facilitate gains in self confidence, competence, and self-esteem. (JW)

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Developmentally appropriate outdoor play environments for infants and toddlers

Bernard van Leer Foundation

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About the author

Jimi Jolley is an independent consultant who helps communities to design and produce low cost, yet developmentally appropriate, outdoor environments for their children using locally available materials. In this paper he discusses the reasons for his interest in the work and offers some examples of how to develop successful ideas for good outdoor environments for young children.

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Bernard van Leer Foundation, *August 1995*

DEVELOPMENTALLY APPROPRIATE OUTDOOR ENVIRONMENTS FOR INFANTS AND TODDLERS

Often in group care situations, where a pre-school also provides care for infants and toddlers, the available outdoor space is very limited. When these infants/toddlers are taken outside, it is into an area which has not been designed as a high-use space for this age group.

In general, if any development of the space has occurred, it has been geared for the perceived needs of the older pre-schoolers. What I've usually seen happen in these instances is that the younger children (aged infant through two and a half years) are then taken out for short periods into areas that don't offer much for the developmental stage of these younger children – areas that are actually not meant for them. The care providers spend most of their outdoor time either trying to entertain these children, since they can do little in a space that doesn't have their needs in mind, or the providers spend a good deal of energy and time protecting the younger children from the more active and mobile older children. This tends to be tiring for the caregivers, restrictive for the children and, usually, results in little time being spent outside for the infants and toddlers.

Infants and toddlers who are fortunate enough to attend a center offering a separate space for them outdoors, often spend little time in these areas because the activity choices to be found there are limited. Caregivers in this situation are usually required to bring extra items outside to provide play opportunities for these children. With all the other responsibilities the care providers have to cope with, this usually results in their either bringing out less and less or only bringing those same items in easy reach which they don't have to think about. The children grow bored with the same items and usually begin to use them in inappropriate ways – to the care providers' way of thinking. What is actually happening is that the children aren't using the play items inappropriately at all – they are merely using them, exploring all possibilities with the objects and elements in their

* Bernard van Leer Foundation (1986) *The parent as prime educator: changing patterns of parenthood.* The Hague, The Netherlands

environment, with whatever skills and/or behaviors they have acquired within the context of their understanding. These types of 'low-level' spaces result in very little quality time being spent outside, thus less and less time is allocated for going outside.

Neither of these situations is without alternatives; there are many ways to provide safe, stimulating, rich and varied environments. In this paper I'll share some ideas and give some suggestions for designs used in the dozen or so infant and toddler outdoor play environments I've created.

Let's first take a quick look at the development stage of this group (the under two and a halfs) and what they are capable of doing. This age group is a rapidly developing one that has a tremendous need for an emotionally stable environment in the form of a consistent and loving care provider. These children need a recognizable schedule that fits their rhythm and they need a micro-environment that is forgiving, safe and secure within a larger environment that offers lots of experiences, challenges and stimulation. These children are oriented through their senses and are gathering, storing and categorizing many bits and pieces of information. Once they start becoming mobile, the amount of territory and stimulation becomes much larger. This stage, in fact, is called the sensory-motor stage of development.

Infants and toddlers need opportunities to try out new skills under many different and novel situations – both expected (the secure, what they know) and unexpected (the stimulation, what they discover). In this way they will understand and trust their own actions in and upon their environment. They use a variety of play behaviors including onlooker, solitary and parallel play, in conjunction with imitation and practice (repetitive) actions, to gain behavior schemes and build a repertoire of individual physical, cognitive, emotional and social behaviors. They will move back and forth among these play behaviors and many others in their exploration and discovery of the world.

Now that we've seen what infants and toddlers can and need to do, how do we make this a reality in an outdoor environment? How do we address real concerns of safety and appropriateness in this environment?

One of the main concerns most caregivers express is how to protect slow-moving (or non-mobile) infants from more active toddlers, so they aren't trod upon by these active walkers who are in the process of exploring and moving through the environment. There are several possible solutions to separate the two groups, but a physical separation needn't be a total separation. Visual contact and even some touching should be provided for and encouraged.

A sense of touch

Offering sensory cues to the more mobile children is one way of helping them become aware that they are moving into a new or different space. These sensory cues could be a change in surface – from hard surface to carpet – or making the space one which you have to step up or down into. One of the most important points to remember is to place the

non-mobile infant areas out of the main pathways between activity areas used by the mobile children, yet still within visual range of the infants.

An enclosure with at least two sides made of thick (1 to 1.3 centimeters) clear acrylic plastic (Plexiglas), each approximately 1.83 meters long and 46 to 50 centimeters high, protects infants yet allows them to see out into the larger world. For infants who can pull themselves into a standing position, the sides also provide an edge to hold onto and travel along. Further, the height of the enclosure acts as a ready-made indicator of when a child is ready to move out into the larger environment: when they reach the cognitive and physical ability to get over the enclosure wall, they have crossed the first developmental barrier in the play environment and they are ready for the larger environment.

One of the plastic sides can be coated with a mirror film so infants can watch themselves and their actions while being outside and feeling the breeze and the warmth of the sun, smelling the aromas, hearing all the outdoor sounds and watching the play of sun and shadow. The other sides can be made from weather-treated (exterior) wood (same lengths and heights), with frames built into them for activity panels that can be slid into place. These frames allow easy rotation of the panels that will give the little ones new activities and experiences, as well as the possibility of removing the panels altogether, to give more room to older children when the infants aren't outside.

Some ideas for these activity panels are such things as various textures, for example smooth paint, varying carpets, sandpaper (different grades), bristle brushes, cloth or anything else with a texture. Photos of the children and their families, faces, shapes, colors and things that make noise can be attached directly to the panels. Boxes containing various textures, with holes large enough for small fingers to explore, are another sensory idea. Containers with pull-cords attached that ring bells or move things in other places give a nice cause and effect experience.

Be sure to top off each side panel with 3.75 centimeter plastic piping to create a nice rounded edge for pulling up on that can be easily cleaned when children mouth the edge while viewing the world beyond their own enclosure. Also be sure to use an easy-to-clean pad inside the area. It helps everyone if a changing area or table with a water source is provided in the outdoor area, close to the youngest children. A basket with those crucial items – extra diapers, bags for used diapers, wipes, crackers and such – is important to help cut down on the number of times the caregiver has to run inside.

To provide shade, color and movement, this enclosed infant area can be covered with a parachute. A circle of plastic hose, sewn into the outer edge of the parachute (the diameter shouldn't be too large), provides tension and keeps the parachute open – without being head-knocking hard. Attaching the parachute to a rope and pulley above the enclosure allows the infants to look up and watch the material as it sways and billows with the breeze, and to watch the light and shadow patterns dance upon it, especially if it's mounted from the limb of a tree. The parachute adds a soft element that can also be raised or lowered by the pulley according to the infants' and caregivers' needs.

The toddlers can also experiment with the soft parachute. By lowering it, the material brushes the tops of their heads as they move under it or gently sways in a pendulum action when they push on it. The parachute can also be raised higher to give definition to space.

Catering to children's different development levels

The idea of developmental barriers – a way to open areas to children while making sure the space fits their developmental level – comes from Gerry Ferguson and is discussed in a book by Joe Frost[1]. Developmental barriers serve the dual purpose of setting limits that contain a child who hasn't yet developed the skills (both mental and/or physical) to go beyond the barrier and signalling an older, more mobile child who is moving through the area that a change has occurred. These environmental cues offer the mobile child the opportunity to become aware of a change in the environment and act accordingly. It also assures that the children decide on their own abilities, fitting themselves into the area that best suits their skills.

Active, moving toddlers tend to visually lock onto something of interest and travel in a straight line to reach it – usually walking into and over anything between them and their goal – stopping only if impeded or unbalanced. By changing and altering items such as surface material, children are given clues that inform them to change their awareness of the area they're moving into. These barriers can take many forms depending on the size of the environment and expectations of the caregivers. The panels of the infant enclosure mentioned earlier are one form of a developmental barrier – a certain height (46 to 50 cm) ensures that only those children who have developed the competent climbing skills can get over the barrier – others are safely contained within. If there are too few non-mobile infants in your program to make this necessary, then things like changes in surface levels or textures will offer challenges and cues to children. If you have a number of crawlers that you want to encourage to explore the environment, yet keep away from main activity areas and within a radius comfortable to the caregiver, then such things as inclines and banking around a sound edge will create just enough textural and cognitive difference to stop young children.

Ferguson suggests the use of a wooden, ground level divider to offer this same cue to the crawler as well as the walker. (Ferguson relates the idea to a concept used on cattle ranches – where gates across roads aren't possible along fence lines, bars are placed at road level, which the cattle find too unstable to cross.) Developmental barriers can be physical and/or cognitive and should be thought of as acting like concentric rings where greater levels of skill are needed to reach each area – employing the maxim that it is more difficult to move outward but easy and safe to move back – while keeping a natural, child-oriented flow to the environment. Other suggestions are low fences, raised flower beds or soft hedges.

Once you've worked out the solution of separating varying levels of children, you then come to the problem of what to provide in the environment. Opportunities to relate to surroundings through exploration and experimentation in a variety of experiences should be offered, while providing a safe context.

Many of the opportunities offered to older children can be scaled down to the developmental level of infants and toddlers. This group also needs many chances to experience how their bodies act upon changes in surface level, angle and texture – what it feels like to move up a hill and then down, what it feels and sounds like to move over varying textures and surface areas, what it's like to use different muscles to control their movements through the environment and to encounter surprises unexpected from the

visual cues, to wonder and be amazed at the world around them.

One of the easiest ways to provide many of these experiences is to re-shape the ground to include hills and slopes that vary – some long and gentle, some straight or curving, and some steeper. Hills are great for giving young children a chance to be physically higher and to view (cognitively mapping) the world around them without worrying about falling off. The hill can also be shaped to provide varying stepping and climbing opportunities via stairs or terraces, using different textural materials such as tires of varying dimensions, landscape timber, or logs laid on their sides.

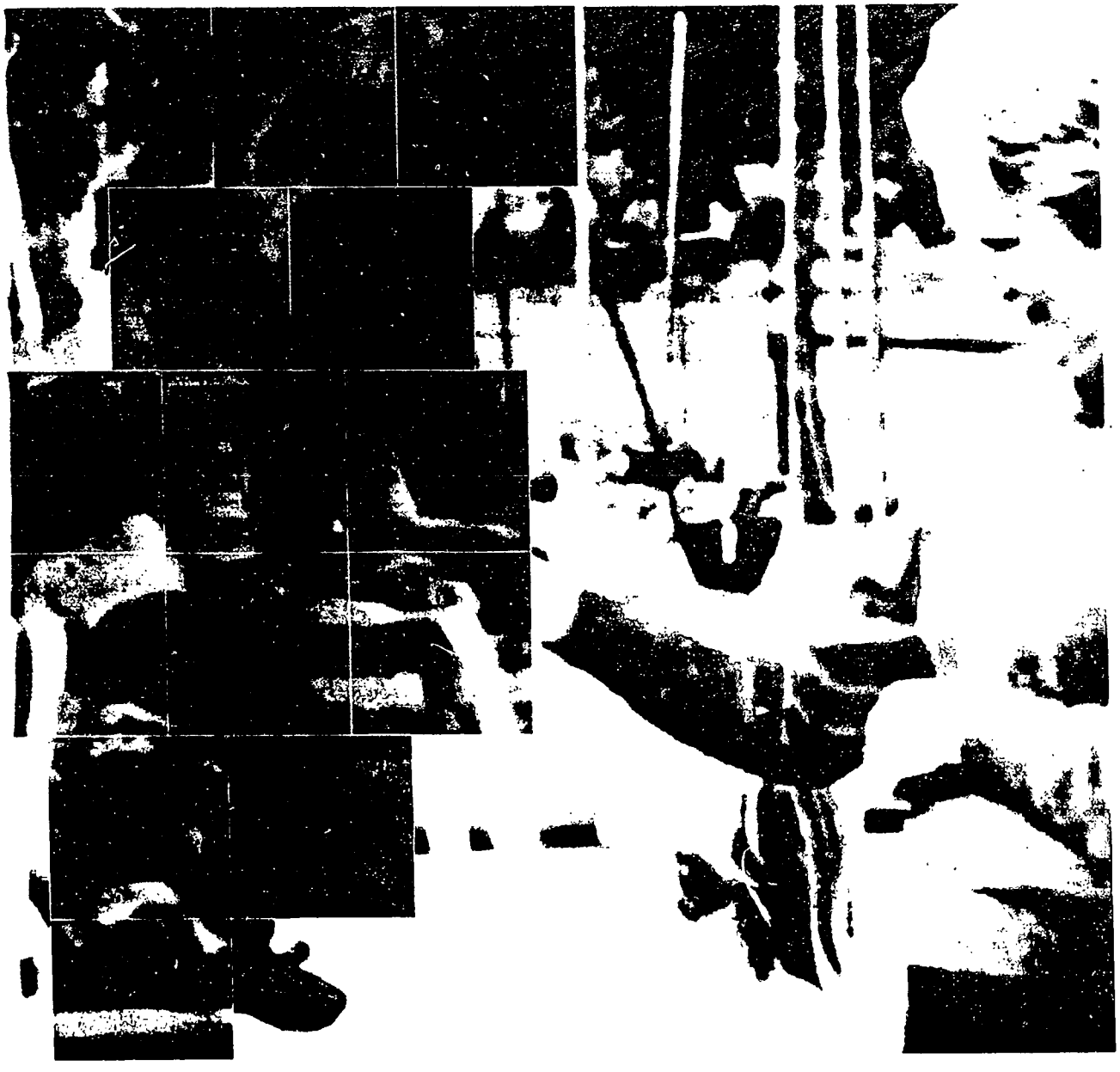
Slides can be built into sides of hills to eliminate the danger of falling or being pushed off. By placing tires along the sides of the slide, a soft barrier is provided that prevents children from stepping into the pathway of sliding children, as well as a handhold to move back up to the top of the slide. A 90 centimeter high hill can easily have a 1.2 by 2 meter long slide placed on it, at about a 32-degree angle, which seems to work fine for this age group. A wide slide allows more than one child to use the slide at one time and, by putting it on a hill, more than one access point to the top of the slide area is provided – which also means that children can change their minds and move off the area.

Pathways that are more than just straight, flat passages are important. They should offer a variety of movements and sensations – curves, dips and raised areas will add to the experiences children have either walking, crawling or riding over them. Again, for different segments, use varying textures that range from things such as smooth, hard concrete to rough wood, marbles mixed in the concrete, cobblestones, limestone (with fossil indentations showing), colored flat stones, bricks or tiles incorporated as mosaics, as well as some areas filled with non-fixed materials such as tapped clay or gravel. All of these materials require different skills and understanding about how to move over and through them, and give different messages that can be applied to the larger world beyond the play environment.

These textured paths are great for crawling infants as they move across and explore the surfaces, both visually and tactilely. Patterned bricks, floor tiles, outdoor carpet and other such materials can (and should) be used to offer lots of variety. Use your own imagination and keep your eyes open to the possibilities in your area to create these textural opportunities. Remember that young infants and toddlers are in the sensory motor stage of development and all we can do to stimulate and encourage these skills will enhance and extend the child's range of experiences.

A sense of surprise can be added to the environment by placing a small infant or child's waterbed just below the ground surface in the sand area. The result looks like sand but has an entirely different movement quality. A waterbed can also be placed with the top side level with the ground for infants to be placed on while outside to offer a change of surface. A thick-walled water bag or bulk drink-syrup containers can also be used.

Don't forget those very important loose materials and setting up areas where quiet table activities can be provided. This age group needs lots of containers to put not only sand and other collected items in, but themselves as well.



A natural environment

Using plants and herbs to supply softness and color as well as aromas, both inside the area for children to interact with and just outside to protect the plants from the active investigation of young children's hands, are easy and important additions to the play environment. Use indigenous plants and check to make sure that they have no poisonous stages (some plants have seasons when they are a danger). You don't want to encourage children to put just anything into their mouths but, at the same time, you don't want to give them a confusing message about eating and tasting plants – which is what our food mostly consists of. A child's environment should be one that is secure to freely explore, so we should take a little more care and time to provide plants and other items which are safe to taste.

Growing a garden that the children can help tend is an option. It doesn't have to be large and the children may only help planting the seeds and watering, but it will provide the beginning experiences of where our food comes from and what plants need to survive, as well as providing taste experiences during harvest time.

Plants can also be used in the environment to create low canopies to provide enclosures that feel child-sized and add a calming 'secret' place for the child that is natural yet open. Young children like to have places that fit their size where they can be alone (that's why boxes are so popular!). Taking a wooden cable spool (such as those electric wire comes on), setting it on its end, and removing a few of the center boards is one way to provide an alone place. Barrels made of plastic or cardboard are easy to cut holes into and place in different areas (the cardboard barrels from bulk spice suppliers have wonderful aromas – except the garlic!). Cut out both ends and place the barrel on the ground as a tunnel between two areas.

All young children enjoy and need to change their position in space and swinging aids in developing balancing skills through inner ear vestibule stimulation. There are many more ways to achieve this than by simply adding an infant swing which requires the assistance of a caregiver not only to get in and out of, but also to sit on and keep in motion (since a child's legs are usually quite some distance from the ground!). To encourage independent choice and self-esteem, other types of swinging opportunities need to be provided.

A horizontal tire swing placed low to the ground and hung with cable, rope or tube-covered chain (uncovered chain can entrap and pinch small fingers) allows children to climb in and out on their own and to set the swing in motion by using their feet to push against the ground. This helps to provide for independence and self-esteem – the pride in 'I can do it myself; I don't have to wait on the whim or time of the adult.' Cut out the top side wall of a horizontal tire and leave the bottom side wall and tread as a seat and backrest for the children.

A wooden porch swing, placed on a small frame in the vicinity, on which caregivers can sit with very young children or with children who need comforting, will also offer groups of children a swinging place that is different. A metal barrel set low to the ground on short chains offers another option either for gentle enclosed swinging or just experiencing what it's like to move through something that sways while you are going through it. (Although I must confess that the number one activity for very young children with this piece of

equipment is for one child to bang on the outside while another child sits happily inside, listening to the rather loud vibrations.)

A platform, made from a square piece of padded wood placed just an inch or two off the ground offers a nice swing for non-mobile infants without a dangerous fall if they move or roll off. Older toddlers love to try to step onto the platform, which requires quite a few skills to be successful, as the board moves away from them when they place a foot on it.

Platforms set no higher than 90 centimeters off the ground with a variety of ways to move on and off also give children lots of opportunities to climb and try out new and developing skills. A stairway with 7.5 centimeter risers (as well as normal adult stairs), a rope/net climb with 9 centimeter squares (small enough to eliminate head entrapment), tire stairs, ladders, etc., attached to two decks which can be connected with moving suspension bridges or arch bridges adds to the exploration and movement possibilities of any area. Be sure to place a thick layer of soft surface under and around the climbing areas to absorb falls. Place a rail on one side of the stairs so that children who want and/or need to hold on feel that they have a choice – a chance to decide if they want to try climbing without holding on. Since there is sufficient protection below, if they decide to take a risk and misjudge their own ability there's no danger of external damage that will seriously or permanently harm the child. The child will be able to get up and either try again, or use the rail, or move to another event, trying a different approach. Thus it is only an internal risk that the child chances.

Learning for themselves

Children gain much in confidence, competence and self-esteem when they feel successful and lose nothing in the long term if other choices in a safe, active environment offer options that forgive and allow mistakes. A large range of activities also provides children with the opportunity to find something to fit their skills level. It is through having available opportunities to make choices that we learn that we *can* make choices and, through our mistakes, we learn how to deal with the consequences of those choices. However, personal consequences for a child should never be something paid for by serious injury!

I hope these ideas help you to create exciting and dynamic environments for your infants and toddlers.

Reference

Joe Frost, *Play and Playscapes* 1992. Delmar Publications: Albany NY USA

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The Foundation's central objective is to improve opportunities for young children who live in disadvantaged circumstances. It does this by supporting the development of innovative field-based approaches in early childhood development, and by sharing experiences with as wide an audience as possible in order to influence policy and practice.

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Some of the papers arise directly out of field work, evaluations and training experiences from the worldwide programme supported by the Bernard van Leer Foundation. Others are contributions which have a particular relevance to that programme. All are aimed at addressing issues relating to the field of early childhood care and development.

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Contributions

Contributions to this series are welcomed. They should be drawn from field experience and be a maximum of 15,000 words. Contributions can be addressed to the Communications Section at the address given below.

Bernard van Leer Foundation,
P.O. Box 82334,
2508 EH The Hague,
The Netherlands
Tel: +31.70.351 20 40
Fax: +31.70.350 23 73