Please cite as:
Stolz, C. (1996). Suggestions for field research on dimensional expressions. In S. C. Levinson (Ed.), *Manual for the 1996 Field Season* (pp. 32-45). Nijmegen: Max Planck Institute for Psycholinguistics. doi:10.17617/2.3003382.

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Background

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Suggestions for field research on dimensional expressions

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Version 3: August 1996

1. Introduction

These "Suggestions for field research on dimensional expressions" are intended to alert you to spatial objects and situations in whose description contrasts of dimensional expressions might occur. However, cultural adaptation is taken into consideration and indeed welcome: if you find other spatial objects and situations more promising in "your" language, please pursue the questions that emerge in your particular field situation. The following Suggestions are an extract from the (scarce) data on dimensional expressions, most of which are still taken from Indo-European languages. They have been exploited in order to identify spatial situations in whose descriptions systematic linguistic contrasts are most likely to appear. However, the comparative database is still much too small to provide any corroborated idea about what is possible in dimension assignment and what is not. Therefore, do not be too surprised if probable linguistic contrasts listed here do not occur in your field situation, but rather different ones do!

These Suggestions are intended as the "macroscopic" complement to the Bloxes Space Game (see this Manual), which operates rather on the "microscopic" level. In contrast to Bloxes, the Suggestions provide a relatively wide range of objects and spatial situations which could trigger off dimensional descriptions. It is highly recommended to use culturally appropriate objects as props wherever possible. The Suggestions give relatively abstract descriptions of the props you may refer to, for instances, they refer to household containers, which may be everything from plastic plates and soft drink bottles to gourds and leather pouches. A few examples are given in each case, but this is mainly to help you find your own, culturally appropriate set of props. If at your field site, there is a big variety of objects which fall under a certain category, say, that of household containers, try to use as many differently shaped items as possible as props for elicitation. For the case that some props are not at hand (e.g. different types of tubes, beads, blocks, etc.), there is a pouch available which provides some of the props you might need for elicitation.

These Suggestions deal exclusively with dimensional descriptions based on the quite regular geometry of objects. For descriptions of objects with irregular shapes, see the Addendum at the end of the Suggestions.

Some notational conventions:

Boldface is used for emphasis.

Italics are used to indicate that this is object language and therefore an example. The examples are taken from English and thus contrasted with the English metalanguage.

"Inverted commas" are used to indicate translational equivalents. *a "high"-expression* means: any translational equivalent for the English expression *high* in a given context.

2. What's a dimensional expression?

A **dimensional expression** is understood here as an expression referring to a particular spatial property of physical objects, namely to one **object dimension**. Throughout this paper, *dimension* is understood as an abbreviation of *spatial dimension*.

Let's talk about the adjectival part of the notion *dimensional expression* first. The main interest of this project is focused on **dimensional** expressions, i.e. expressions that are likely to occur in dimensional descriptions of physical objects. By each dimensional expression, exactly one symmetric axis or volume of a 1D, 2D or 3D object is singled out and described, as in *That man is **tall*** or *That's **a long** road.* When the object has more than one dimension, dimensional expressions that per definition refer to a single dimension may also be combined in the description of the whole object: *The lake is **wide and deep.*** or *He hit him with **a long thick** club.*

There are other types of expressions that often co-occur or otherwise interact with dimensional expressions in complex ways, namely **size, shape** and **distance expressions.** Whereas a dimensional expression singles out one particular object dimension, size and shape expressions refer rather to **overall gestalt properties.** Size is understood as being equivalent to the overall extension of an object. It is a relational object property, i.e. comparison to a reference object is needed in order to determine the size of a particular object. This, however, is not true for shape. The shape of an object can be determined and described without any reference object, i.e. it is an inherent object property. Quite often, size expressions like *big*, *small* or *huge* or shape expressions like *round*, *ovoid* or *triangular* cannot be combined with measure phrases because there is no precise extent of the object that can be thus measured. Both size and shape expressions are, however, often accompanied by very particular gestures.

Distance expressions like *near* or *far*, however, do single out one dimension of objects (or, more frequently, trajectories) and can thus easily combined with measure phrases, but they may not refer to 2D or 3D objects.

Apart from the major semantic criterion that dimensional expressions refer to spatial dimensions of physical objects, there are three minor formal criteria which may corroborate the identification of a particular expression as dimensional, but which are nevertheless not necessarily universal. If they do not hold for "your" language, please mention this explicitly.

a) Dimensional concepts are assumed to be graded concepts. Therefore in many languages, dimensional expressions frequently co-occur with grade markers, such as *That skirt is **very/ rather/ a bit long***. Dimensional expressions also occur frequently in comparative constructions, such as *This novel is **thicker than** the one I read before.*

b) In many languages, dimensional expressions can be combined in one way or the other with measure phrases: *That man is **six feet tall*** or *That lake is **200 meters deep.***

c) In many languages, dimensional expressions cannot occur in conjunction with size expressions, as in **This suitcase is **long, wide, and big**.*

Although the dimensionality of physical objects and the dimensional expressions occurring in their description are of special interest in this project, it is very likely that size, shape and distance expressions (and perhaps other, unanticipated expressions) will occur in those object descriptions as well, and have therefore to be taken into consideration. Even if we assume all the possible semantic and syntactic differences stated above, it is quite probable that dimensional, size, shape and distance expressions may be all in the same formal class in "your" language. To clarify the notion of *dimensional expression*, I would like you to try to prove to me that dimensional expressions (which are rarely a distinct formal class in most languages, anyhow) are not a distinct semantic class, either, by taking into account their co-occurrences and interactions with size, shape, distance etc. expressions.

As for the nominal part of the notion *dimensional **expression***, the use of this rather vague term indicates that the attention of the researcher should not be directed exclusively to terms, i.e. lexemes. I do not want to focus exclusively on a particular part of speech, or elements of a particular word class, either. Using this very loose notion avoids having to delimit the morphosyntactic complexity of the linguistic units which are used in dimensional descriptions of objects. So, an account of English dimensional expressions would not only include such monomorphematic simple adjectives as *long*, *tall*, *short*, *wide*, *deep*, *high*, etc., but would also mention that there are (derived) nouns like *length*, *width*, *height*, etc., or verbs like *extend* or *elongate*.

3. Semantics

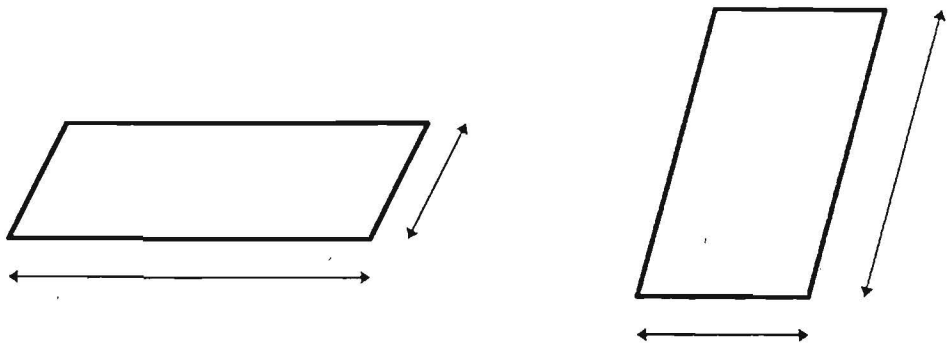
I) 1D objects

How are 1D objects like lines (or very thin extended objects, like thread) described? In the same way as paths, or differently? Can edges of a 2D or 3D object be described as a line? Or rather as a path?

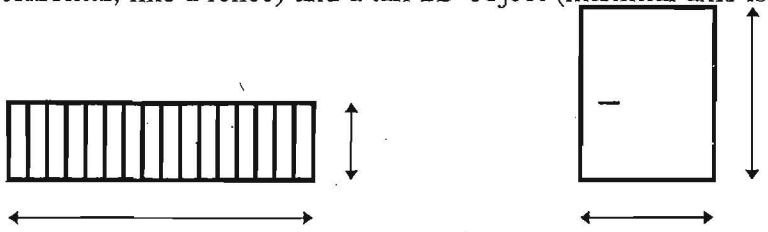
II) 2D rectangular objects

II.a. How is the dimensionality of a large horizontal, 2D rectangular object (like a field, a square, a garden, a football ground, a corral or the floor of a house) described? Is there descriptive variation if the 2D object is enclosed and fenced (like a corral), in contrast to an open surface (like a field)?

Is there descriptive variation due to the position of an observer? I.e., does the description vary if you enter a house or a corral through a door on the long side or on the short side, respectively?

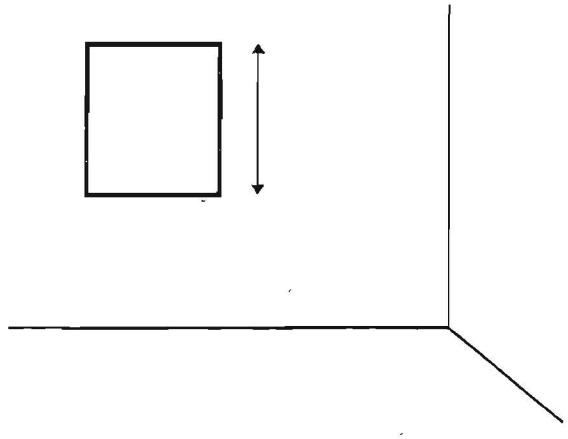


II.b. What happens if a 2D object is not oriented horizontally, but vertically, like a fence, a wall, a door board, a poster, a screen? Are there totally new expressions, or are there expressions you have already got to know from the previous part of the elicitation? Describe the variation between the descriptions of a low and long 2D object (maximal axis is horizontal, like a fence) and a tall 2D object (maximal axis is vertical, like a door board).



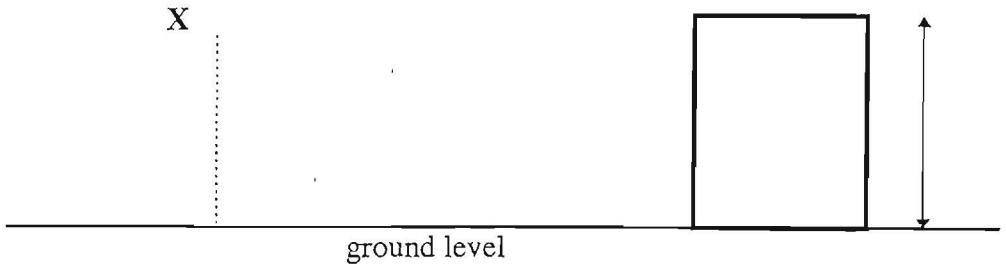
fence door-board

II.c. How is a vertically oriented 2D object not based on ground level described, like a picture on the wall, a window, or window shutters? You probably found a "high"-expression when checking point II.b. Is the same expression used to describe the vertical dimension of an object not based on ground level?



ground level

Is a "high"-expression also used to express vertical **location** and not only vertical **dimension**? In English, this is not the case: *The picture is 6 feet up from the ground / *high.*

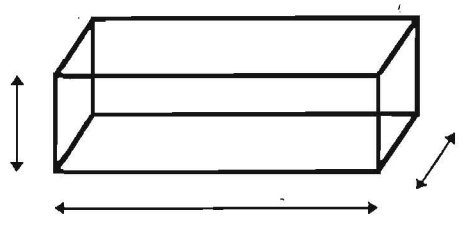


III) Block-like 3D objects

III.a. Which dimensional expressions refer to the three differently extended dimensions of a brick or a wooden block? Do the same dimensional expressions occur as in descriptions of 2D objects? If yes, is there an additional expression for the third dimension?

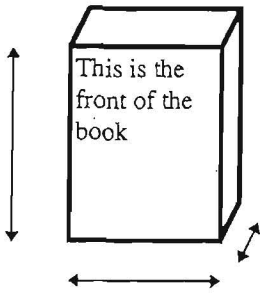
What happens if you rotate the brick or block with respect to the vertical, like when you stand it up? Please try all possible orientations with respect to the vertical. Does the dimensional description take the vertical into account, i.e. are a standing brick and a lying brick described differently?

Does the dimensional description vary if you change the orientation of the brick with respect to the position of the observer, i.e. place it along or across the observer's line of vision, or inclined? Please try all possible orientations with respect to an observer.

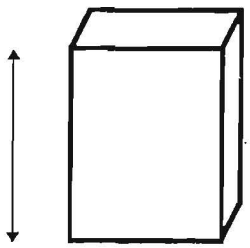


III.b. What happens if a block-like object has got an inherent orientation, like a stack of paper which has an inherent top, or a book which has an inherent front and top? Does the description vary from that of a brick which does not have an inherent orientation? Do

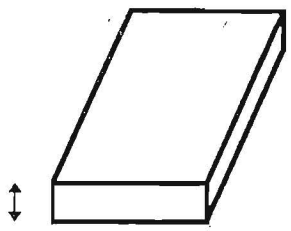
the descriptions of paper-stacks or books under rotation, both with regard to the vertical and with regard to the observer, vary from those of an inherently unoriented brick? Please try all possible orientations.



III.c. One of the three dimensional axes of a brick-like object is probably coinciding with the vertical. Is a "high"-term used in any case? Or is it only used with the more extended axes and not with the minimal axis? (*a **thick** brick* is not the same as *a **tall** brick*).



a "high" brick?



a "high" brick?

Is the description the same when a brick-like object has an inherent orientation, like a stack of paper or a book, for example?

IV) Layers and coatings

IV.a. Layers and coatings are 3D objects which are very saliently extended on 2 axes, but have a minimal third axis, i.e. a thickness. Do the dimensional descriptions of layers and coatings, such as blankets, carpets, cloth or clothes, floors, walls, roof material etc. differ from those of brick-like objects? If yes, how? Pay special attention to a "thick"-expression (what about *thick / thin clothes, a thick carpet, a thin blanket*?).

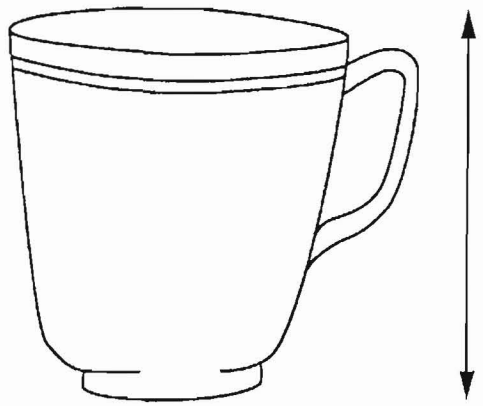
IVb. Can other objects which are very extended on two dimensions also be described in the same way (candidates: the asphalt layer of a street, layers of earth, but also shallow water)?

What about the coating of otherwise shaped objects (*thick / thin bark* or *peel*) or the material of objects with a hollow, for instance the material of containers (*thick / thin porcelain* or *glass* or *plastic*)?

V) Container-like 3D objects

V.a. How are bodies of water described? Is there a "deep"-term for the dimension that is oriented downwards? If yes, pay special attention to the antonym(s), there is often more than one.
Can other natural objects which are not bodies of water (for example layers of earth, caves or craters) be described in the same way?

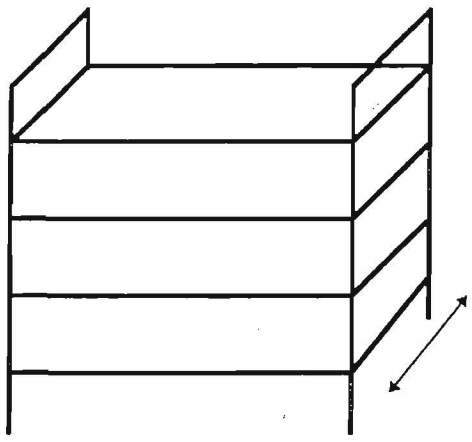
V.b. Can a "deep"-expression also refer to household containers (pots, plates, bottles, tanks, gourds, pouches, baskets etc.)? Is it the same as for bodies of water? Is there an antonym, then, or more than one?
With all or some container-like objects, can the dimension singled out by a "deep"-expression also be identified by a "high"-expression? (As in *deep / shallow / *tall / *low plate*, but *deep / shallow / tall / low pot*, or Lang's example: *This saucepan is too tall to fit into the shelf, but not deep enough for the turkey.)*



a "high" cup, a "deep cup, or both?

Can a container still be described as "deep" if it is not in its prototypical vertical orientation (such as a cup or a plate with their opening or hollow oriented upward), but is lying on its side or placed upside down? What happens if the observer is looking up into the opening of a container? Please try all possible orientations.

V.c. Can a "deep"-expression refer not only to hollow objects whose opening or hollow is oriented upward, but also to hollow objects whose opening or hollow is oriented horizontally, like caves, houses or churches, trailers, cupboards or shelves?

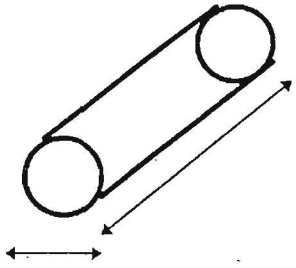


a "deep" shelf?

Can a "deep"-expression refer to the location of an object in a large group of objects (*deep in the jungle*)?
Can a "deep"-expression refer to horizontal surfaces (2D objects, such as fields, football grounds, corrals, gardens, surfaces of tables or desks, window sills)? There may be a difference between the descriptions of enclosed or fenced surfaces (like of a corral or a garden), and open surfaces (like of a desk or a table).
If "deep"-expressions can refer to such 2D objects at all, there may still be a difference between the descriptions of surfaces with a fixed direction of access for the observer (like a desk or a window-sill, which usually have one particular access side) and surfaces which are accessible from all sides (like a kitchen-table or a field).

VI) Pole-like 3D objects

VI.a. How is the dimensionality of pole-like, i.e. roughly cylindrical objects (such as pencils, trees, posts, sticks, legs, necks) described?



If there is a "thick"-expression used in the descriptions of pole-like objects, is it the same as that which refers to the thickness (i.e. minimal axis) of 3D brick-like objects or layers and coatings (see point III.), or is it a different one? Can this expression be combined with measure phrases? What does it refer to exactly, the diameter, the girth, or the volume of a pole-like object? It is more likely that the "thick"-expression can be combined with measure phrases if it refers to the diameter or the girth of a pole-like object, but less so if it refers to a volume.

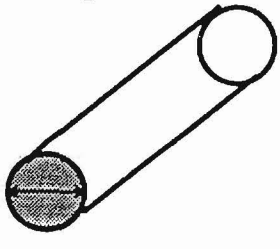
diameter girth volume

VI.b. Does the same "thick"-expression refer only to long, cylindrical objects (such as pencils or trees), or also to rather flat round objects (such as plates, disks, pot-lids, or wheels)?

VI.c. Ask how the girth and the tallness of people are expressed. Are the same dimensional expressions used for animals? For trees? What about grass? If there are differences in the descriptions of girth and tallness, try to determine the reasons: differences in substance? Animacy? Rigidity etc.?

VII) Tube- or ring-like 3D objects

VII.a. How is the width of the opening of hollow object (such as tubes, hoses, rings, reeds etc.), i.e. tube- or ring-like object described? Is it described with the same "wide"-expression used for the shorter dimensional axis of rectangular 2D objects (see point II.), or is there another expression?



VII.b. Is the dimensional description of a tube-like (hollow) object (such as a hose or a ring) identical to that of a similar pole-like (solid) object (such as a branch or a leg), or

are there differences in their dimensional descriptions? There may be differences in the descriptions of the circular cross-sections (*a **wide** tube* but *a **thick** pole*).

VII.c. If a "wide"-expression can refer to openings of tube- or ring-like objects, can it be used for all shapes of openings, i.e. also for roughly square openings like doorways and windows, or only for circular openings?

VII.d. Check the usage of "wide"-expressions for garment (*This skirt is too **wide** / *too **broad** for me.*)

VII.e. Ask about the dimensional description of a wheel. How is its diameter called, how the thickness of the wheels (a bike wheel vs. a truck wheel etc.)? Is a "thick"-expression used? If yes, to which extent of a wheel does it refer?

VIII) Round and square objects

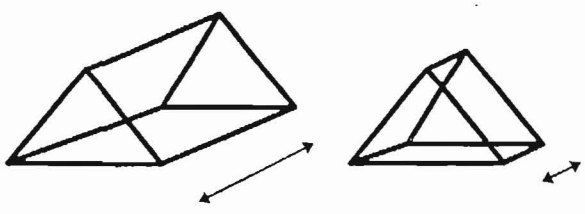
These are compact objects (2D or 3D) where no singular maximal axis is identifiable, such as circles, globes, squares, dices, etc.

VIII.a. Can circles or squares (2D objects) be only described with size expressions (like *big / small*) or also with dimensional expressions proper? If yes, with which ones? One candidate could be a "thick"-expression.

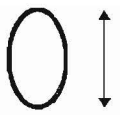
VIII.b. Are globes and cubes (3D objects) described exactly like 2D objects (circles and squares) in this respect? What about naturally occurring approximations of globes and cubes, for instance apples or other round fruit? Also check the descriptions of more or less rounded body parts (head, face, eyes etc.).

IX) "Difficult" objects

Ask how informants would describe the dimensions of geometrical objects which are not quite so ideal for dimensional description, for example triangles, prisms, flat or oblong beads etc. How would they contrast the two kinds of prism, or the three kinds of beads depicted below?



a ??? prism a ??? prism



a ??? bead

a ??? bead

a ??? bead

X) Clothes

How are clothes like shirts, skirts, trousers, and their fit normally described? Are any of the dimensional expressions identified so far used (e.g., *This skirt is long, tight, wide, too big* .etc.) What about more rigid clothes, like shoes or hats?

4. Paradigmatic relations: antonyms

Please ask informants systematically whether there are antonyms of dimensional expressions. For this end, take any utterance containing a dimensional expression identified so far and ask informants how they would express the contrary.

Usually, informants associate the antonyms quite spontaneously. Pay particular attention to antonym splits (i.e., one dimensional expression having more than one lexical antonym). Other dimensional expressions may not have a lexical antonym at all, but are negated to create an antonym.

5. Morphology and syntax

I) Are the dimensional expressions found in descriptions of physical objects so far syntactically simple or complex? And, if they are syntactically simple, are they also morphologically simple? If no, are their elements identifiable?

II) Measure clauses

II.a. If there are measure clauses (e.g., clauses containing measure information and a dimensional expression), how are they, as well as questions for measures, construed? (***How long is the train? The train is 7 cars long.***)

Are alternative constructions possible in one language? (*That piece of fabric is **2 meters long***. vs. *That piece of fabric **has a length of 2 meters.***)

Are there indigenous measurements?

II.b. Are there markedness relations between antonyms? For instance, can a negative polarity dimensional expression (like *short*, *narrow*, *shallow*, *low* etc.) occur in combination with measure phrases or questions for measures

a) easily or

b) only under special contextual conditions, or

c) not at all?

In English, there seems to be a vacillation between b) and c): *?**How short is that person?*** *?**She is 5 feet short.*** This use of *short* in measure clauses is either considered not appro-

priate at all, or informants have to imagine a very specific situation in order to contextualise this marked usage.

III) Comparative constructions

Since dimensional expressions frequently occur in comparative contexts in many languages (be it implicit or explicit comparison), please pay attention to how comparatives are expressed in "your" language.

Ask about comparatives with expressed standard (*He is taller than I am*),
without expressed standard (*He is taller*),
superlatives (*He is the tallest*),
intensives (*He is very tall*),
equatives (*He is as tall as I am*),
excessives (*He is too tall*)
and aptitives (*He is (not) tall enough*).

Are there syncretisms of the different types of comparatives tentatively given above? Or are there any other categories with separate expressions?

Addendum: irregular shapes

1. Introduction: shape and dimension

In this project, shape and dimension are assumed to refer to quite different object properties. With the exception of 1D objects, *dimension* refers to one particular object extent, namely a symmetric axis or volume, but not to the whole object. *Shape*, on the contrary, is assumed here to be one of several complementary aspects of a holistic gestalt.

A decomposition of shape into dimensions is possible only under particular circumstances, for instance if Lang's homegeneity requirement holds: dimension assignment is easiest with homogeneous objects of quite regular shape whose extents form homogeneous and adjacent surfaces. Or, to put it the other way round: shape can be broken down into dimensions if it is quite homogeneous. A decomposition of shape into dimensions does not, for instance, do justice to shape if the contours of a shape are not straight and ideally parallel, but curved or tapering (such as a soft drink bottle), or if the shape is asymmetrical (such as a bent tree). A reduction of shape to dimensions includes many abstractions from the actual shape of the objects.

Another precondition of breaking up shape into dimensions is that the shape be quite simple and not compound: if it consists of many visible and separable parts, these may allow for their own dimension assignment.

A further difference between shape and dimension is that a class of perfectly recognisable shapes, namely the "ideal" shapes of Euclidean geometry (circles, squares, triangles or their 3D equivalents), are exactly those shapes which cannot be easily broken up into dimensions (see point 2.X. on "difficult" objects in the main section). This has to do with the fact that these shapes are quite compact, i.e. their symmetric axes all have the same (circle) or at least a very similar extension (square and triangle). The assignment of

dimensions is easier if there are clear differences in extension, if there is, for instance, a salient maximal axis and a minimal axis, as in the case of a rectangle.
To sum up: there are at least three interacting ingredients of the notion of *shape*, namely object-inherent dimensions and proportions, contours, and parts.

2. Shape expressions

The main section has focused on objects which are rather "geometrical" in the sense that they have symmetric and rather regular shapes, since these are assumedly easiest to describe dimensionally. However, if you find in "your" language that there is a wealth of shape descriptions, as is reported for Highland Mayan languages, for instance, it may be worth investigating this part of the vocabulary more closely. If you have the impression that shape expressions can be found frequently in descriptions of objects and situations listed in the main section, you may want to find out if the same expressions also occur in the descriptions of irregular shapes. Since object-inherent dimensions and proportions have been dealt with in the main section, the addendum will only list shapes which are irregular with respect to contours and parts. The list below is indeed rather short; search your surroundings for irregular shapes of all kinds which can be used as props. You can also draw shapes and have informants describe them. Try to vary shapes or components of shapes in small steps, as to identify discrete classes of shapes for which one description is appropriate.

3. Irregular shapes: contours

I) Tapering shapes

Tapering shapes can be symmetric, but are nevertheless often hard to describe dimensionally.

I.a. Check how bottom-heavy and top-heavy shapes are described.

I.b. What about shapes with a waistline, for instance soft drink bottles or hourglasses?

I.c. How are bottom-heavy shapes with a waistline (for instance pears, peanuts) described?

I.d. How are different roundish shapes (a spherical container like a tea-pot, a rather long container like a bottle) described?

II) Asymmetrical and bent shapes

II.a. How are bent, but rather long shapes (such as a bent tree, a crooked nail, a tilting flower) described?

4. Irregular shapes: parts

I) Openings

I.a. How are shapes of containers with openings of different size described (e.g. a narrow-mouthed bottle, a wide-mouthed bottle, a bowl)?

I.b. Does it make a difference for the description if the opening is round, square or longish (as with a cassette cover)?

I.c. How are containers with a rim or a bulge around the opening described?
I.d. Does the position of the container (prototypical position, upside down, lying on its side, opening towards the observer, opening away from the observer) have consequences for its description?

II) Protrusions
II.a. How are shapes with humps or protrusions on an otherwise compact object described, if they are big / small/ roundish / pointed/ longish, if there is one / if there is more than one / if they are paired? What if the protrusion itself has a hole, like the handle of a cup?
II.b. Does it play a role where on the object (top, bottom, side etc.) the protrusion is?
II.c. Does the object support the protrusion or the other way round?

III) Indentations
III.a. How are shapes with indentations (squashings, concavities) described?
III.b. Does it play a role for the description if there is just a slight indentation or a real hollow?
III.c. Does it play a role if the indentation or hollow is centred or peripheral?
III.d. How are heart-shaped objects (with an indentation on one side and a point or protrusion opposite of it) described?

IV) Bases
How are shapes with a flat base, but otherwise round or irregular shape, described?