

The Ontogenesis of Metaphor: Riddle Games among Quechua Speakers Seen as Cognitive Discovery Procedures

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"Knowing about metaphor means knowing how to organize the universe within
our minds. . . ."

Sol Worth, "Seeing Metaphor as Caricature."

1. Introduction

As an introduction let us begin with a few comments about metaphors. Abrams (1961:36) defines 'figurative' language as that which departs from 'ordinary' language in order to achieve special meaning or effect. 'Figurative'

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language departs from 'ordinary' language by changing the order and significance of words. One of the most common means of constructing figurative language is metaphor. "Metaphor has always been defined as the trope of resemblance; not simply between signifier and signified, but between what are already two signs, the one designating the other" (Derrida 1974:13). Analogical extensions are constructed by attributing a characteristic of the signified that is not the 'ordinary' or usual meaning of the word. For the purpose of analysis of the data on Quechua riddles presented here, three levels of complexity are examined.

- (1) Riddles based upon rhythm and rhyme (4.2), figures of sound.
- (2) Simple riddles (4.3) which are analogical statements based upon the construction of a simile or a simple comparison involving oppositions or negation.
- (3) Complex riddles (4.5) which involve the comparison of multiple terms which construct metaphorical statements through propositional statements of the form A is to B as C is to D.

In the conclusions (7) a hypothetical model of metaphor ontogenesis is discussed whereby the three levels of complexity are correlated with cognitive and semantic development. Metaphor, it is argued, plays an important function in cognitive and semantic development of Quechua-speaking children who engage in riddle games. It appears that riddling among the Quechua functions as a discovery procedure as children expand their cognitive operative structures and semantic domains.

Riddle games are verbal play which involve puzzling about 'what is like what.' The metaphors are comparisons of sound, form, texture, motion, and function of phenomena. One of the aims of the activity is to see how far one can extend meanings of words. The other function of metaphors in riddling, it is argued, is to challenge further cognitive development as riddle poser and listener interact in a competitive game of intellectual skills.

For purposes of discussion of the data presented, a distinction is made between metaphorical statements which are well known and within the domain of common knowledge and those metaphors which are innovative. The former are referred to as 'dead metaphors.' A good example in English is, 'the mouth of the river,' which at one time had 'figurative' value but has become so well used that the statement is now a part of 'ordinary' language. For a child the statement might well provide a new discovery, however, as he or she reflects upon the meaning of the word 'mouth' within the context of the statement.

The social dynamics of metaphorical statements are discussed in section 3 where it is shown that riddle content changes rapidly over time owing to the fact that riddle games are a part of juvenile sexual socialization. Common rules and structures are followed, however, for the creation of new riddles (see 4.4). The Quechua themselves state that persons expert in riddle posing are

more intelligent and, moreover, they are believed to be expert sexual partners. The latter is due to the social context of riddling described in section 2. The social context is one of sexual 'play' between adolescents whereby competition between the sexes includes demonstrating one's intellectual skills in the creation of riddles, songs, and insults combined with sexual skills.

Ricoeur (1974:99) has asserted that "A word receives a metaphorical meaning in specific contexts with which they are opposed to other words taken literally; this shift in meaning results mainly from a clash between literal meanings, which excludes a literal use of the word in question and gives clues for the finding of a new meaning which is able to fit in the context of the sentence and make sense of this context." This statement is an appropriate description of the dynamic process of riddling. The riddle listener must examine the clash of meanings offered by the riddle poser and consider new possibilities. The clues in the riddle might be enlightening or they might be false clues designed to fool the listener. Constraints delimit the possibilities for the construction of innovative metaphors and in section 4.4 an interactive dialogue is described in which both success and failure of innovative metaphors are analyzed.

The Quechua language demands the inclusion of a series of markers that tell the listener whether the speaker is reporting something from personal experience (topic and comment markers). These markers are obligatory in normal discourse. In the riddle games, statements are not so marked. Therefore, riddles are relegated linguistically to the realm of ambiguity. The riddle listener must discover the possible and hypothetical in semantic domains. The activity is an investigation of the limits of ambiguity. Derrida (1974), Loewenberg (1975), and many others have debated the truth value of metaphors. It is apparent that for participants in Quechua riddling, it is not the truth of the statements that is important, but rather new conceptualizations through analogy that are important.

An expert riddle poser surprises his or her listener with an innovative view of the world. Nevertheless, as Edmonson (1971) and Wilbert (1975) have noted, metaphorical statements are units of closed-circuit communication systems specific to individual cultures. The analogies presented by the riddle poser must remain within that closed system in order to be understood. Riddles are a part of the folklore of a culture. The word *lore* comes from the Saxon word *lar* and means "teaching" (Edmonson 1971:1). Metaphorical puzzles in Quechua riddling are powerful tools of instruction.

The data on riddles were collected in several communities in the department of Ayacucho, in the south-central highlands of Peru. A total corpus of 109 riddles was recorded, fifteen of which are presented here. Half of the riddles collected contain rhythm and rhyme constructions. Ten were variations of other riddles recorded. Seven were created spontaneously, four of which are discussed in section 4.4, The Creation of Riddles. The onset of riddling begins

at about eleven or twelve years of age and continues until one marries. We were unsuccessful in our attempts to elicit riddles from younger children. We did not, however, record the free play activities of younger children, which is the situation where one is apt to find such activities.

2. The Social Context of Riddles

Judging from the data we have collected from the south-central highlands of Peru, riddling among Quechua speakers occurs within two related contexts associated with amorous 'play': (1) during individual encounters while adolescents are pasturing herds away from their villages in the high grasslands, and (2) during a group activity that is literally called 'to pasture life'—*Vida Michiy*. An invitation 'to play' connotes the combination of posing riddles, clever insults, music, and sexual activities. We might say that within these two contexts adolescents are discovering new cognitive relationships coupled with new sexual relationships.

If a young man encounters a girl alone pasturing her family's herds, he usually initiates interaction with a clever compliment or insult, or by playing a song for her on his *chinlili*, a small guitarlike instrument. He might even draw the girl's attention by throwing small stones at her to which she responds with insults or riddles. One male informant told us that girls are much better at posing riddles because they spend so much time alone herding. Someone who is innovative with riddles, insults, and songs is also believed to be a good sexual partner.

Vida Michiy ('to pasture life') activities take place generally during community fiestas, though they can occur spontaneously at other times as well. Groups of young boys may decide to get a *Vida Michiy* together just as a group of North American youths might decide spontaneously "to hang out" one evening at their favorite place in the hope of meeting girls.

Quechua-speaking youths rely less on chance. They band together, armed with their *chinlilis*, and parade through the streets of their villages playing and singing as an invitation for girls to join them. Once the group is gathered together, they ideally leave the village boundaries and ascend to the high pasture lands 'to play *Vida Michiy*.'

In the region of the River Pampas in the department of Ayacucho, where most of the data were collected, the village is considered the 'civilized' place as opposed to the high grasslands, called the *sallqa*, meaning savage, or *puna* (grasslands). Adult informants told us that in years past young people were accustomed to holding their *Vida Michiy* celebrations at the gates of cemeteries, another 'uncivilized' place. The careful vigilance of the civil-religious authorities, however, has put a stop to such sexual play at the resting place of the dead.

The group of boys might range in age from ten to over twenty; girls do not participate until after puberty. If one is recognized as a leader by virtue of his musical abilities, metaphorical cleverness, and his sexual expertise, he might be called the captain of the group. The younger boys are jokingly called his soldiers whom he commands to fetch more alcohol when it is needed, carry lanterns, hold hats, and generally be the attendants to the older boys.

While this loose organization does not mirror exactly that of the adult organizations of the civil-religious hierarchies of traditional communities, it reflects many of the adults' organizational principles. While the adults' civil-religious hierarchies function to maintain sociological and cosmological order, however, the juvenile groups attempt to escape that order and search for their own sexual and social identity. Fernandez (1974:120) defines metaphor as the predication of a sign-image upon an inchoate subject. He argues that the first mission of metaphor is to provide identity for such subjects.

Within the context of sexual 'play' or exploration among the Quechua speakers from whom we have collected these data on metaphor use in riddles, we can see a direct correlation between the search for one's sexual identity and the creative manipulation of metaphors in riddles, insults, and songs. Interestingly, the Quechua communities where we have conducted fieldwork do not consider a person an adult nor a member of the community until marriage. Therefore, maturity is defined by the completion of sexual identity. Informants explain that persons are not complete until they have been joined to 'their other half,' their spouse in matrimony. Before one is joined in a permanent union it is deemed wise to engage in amorous explorations. These explorations in sexuality are combined with explorations into the cognitive boundaries of phenomena through the manipulation of metaphor. It is no surprise that a person judged good at one activity (metaphor construction) is also believed to be good at the other (sexual activity). Moreover, the person who is clever with songs, insults, and riddles is judged to be more intelligent than those who do not display these abilities. In the conclusion of this paper (6), we will attempt to demonstrate that their intuitions are probably correct. Such intelligence is esteemed and the adolescents who excel at these activities gain prestige in their peer group just as adults gain prestige through service to their community in the civil-religious hierarchies.

Vida Michiy combines the modes of riddles and music and heightens them with the emotional charge of sexual explorations. Worth (1974:199) asks: "... is metaphor a metastructure dealing with a code which is transformed upon a variety of modes, visual, musical, verbal, and even mathematical?" Within the context of riddle usage among Quechua speakers, the answer is clearly yes. Visual images are painted with the aid of dance and music to form what Worth refers to as a montage of words, music, and movement. The boys provide instrumentation and the girls a high-pitched falsetto chorus.

When the groups of boys and girls gather together, they begin their amorous 'games' with competitions between the sexes in posing riddles, creating songs, accompanied by competitive dancing, drinking, and insult exchanges. The escalation of verbal and musical creativity culminates in group sexual activity. The expectation of the boys is that they will be able to have sexual relations with all of the girls present whom they are not related to through the network of kinship and extended compadrazgo relationships. Very often a kind of reciprocity is practiced between couples who are approaching the establishment of permanent unions whereby they exchange partners.

Permanent unions often result from *Vida Michiy*. Nevertheless, until marriage young people continue to participate in the adolescent amorous 'games.' Young men continue to a greater extent than do girls who have stable partners. Moreover, among the indigenous population there is no social stigma attached to such sexual freedom. If, by chance, a girl becomes pregnant, the child is absorbed readily into her extended family. Children are valued as potential members of the labor force and disputes often ensue over who has the rights to the child's labor contributions. A girl who has had a child prior to marriage is not viewed as unmarriedable. On the contrary, a girl who is believed to be a virgin after late teens is often reputed to belong to the mountain deities, which renders her dangerous and unapproachable.

Once a person has married, not only is fidelity expected and *Vida Michiy* unthinkable, but there is also a decline in the oral traditions that accompany this form of group sexual activity. It is not considered appropriate for young married women to sing to the accompaniment of young men in the streets. Even young married men are reluctant to play the *chilili* in public places because such musical activity is the outward manifestation of sexual 'games.' Likewise, riddles are associated with one's juvenile sexual development, and adults abandon these oral and musical traditions for more serious and formal ones associated with participation in the communal fabric of ritual life. This articulation of riddle production with adolescent sexual development is evidenced by the fact that adults do not know many of the riddles that are popular with their children. Music, insults, and riddles are constantly under construction and modification by succeeding generations. We will demonstrate this generation gap in the transcription below which took place between a thirty-four-year-old adult male, who held the office of traditional mayor of his moiety, and a girl of twelve. The traditional mayor had been providing myths and stories for us to record when we asked him to tell us some riddles. He explained that one could not just tell riddles; rather the asker had to have an active listener to respond. Therefore, he left for a moment to find a neighbor, an adult woman, to respond. Upon their return, they jokingly remarked that riddling was for the young. At that point several schoolgirls stopped in to find out what the strange foreigners were up to. To their delight, we told them that

we were recording riddles and immediately they shouted that they knew lots of riddles. The twelve-year-old girl challenged the adult man with the following riddle. The conversation took place in Quechua, the dominant language of both the child and the adult.

3. The Social Dynamics of Riddles

The girl began the riddle with the standard opening question:

GIRL: Imalla hayka asá!

Only what, only how many, what could it be?

ADULT: Āsá!

What could it be? [*Asá* has no real translation, but rather is a formula to begin riddles. When the listener answers *asa*, it signifies that the challenge has been accepted.]

G: Waq law pampapi huq machucha
runtunta champayanankama
suqurun.

In that flat place an old man sucked
on his egg until fibers [or hairs]
came out.

A: Runtunta champayanankama?

His egg until fibers [hairs] came
out?

G: Mm.

Mm [indicating yes].

A: Ima cosaschamanta chay qatin?

What things follow this? [meaning
what things, or category, is the
answer related to?]

G: Llapa frutakuna cosas.

With all the fruits.

A: Rutumpas champayanankama
suqurun ... mm ... fruta cosas ...
qué cosas ... Imataq chayqa
kachkanman. Ima cosaschataq
chayqa. Frutamanqa.
Llapallan frutatachu maskaseq?¹

You say that he sucked on his egg
until hairs came out ... mm ...
things of fruit ... what things? ...
What thing could it be? To fruits?
Do I have to look among all
fruits?

¹... indicates hesitation or pause.

- | | |
|--|---|
| G: Ari. | Yes. |
| A: Frutallata? | Only among fruits? |
| G: Mm. | Mm [indicating yes]. |
| A: Tunata? | Is it cactus fruit? |
| G: Manam. | No. |
| A: Kay, kay llaqtanchiqpi
wiñanchu? | Here, here, does it grow in our
village? |
| G: Manam. | No. |

At this point several of the schoolgirls began to offer answers. The adult woman asked: "Don't you think that she has beat you?" He answered no, but he evidently was puzzled. He pondered for a moment and offered several fruits which were incorrect. Then one of the children shouted the answer—a mango.

In order not to lose face, the adult man, one of the most respected ritual specialists and storytellers of the community, attempted but failed to recall riddles. The exchange between the girl and the adult serves to illustrate that riddles are dynamic and change rapidly over time. The two adults present complained that they had forgotten riddles because such activity was child's play.

An obvious sexual metaphor is alluded to with the phrase: "A man sucked on his [ambiguous pronoun] egg [testicle] until fibers [hairs] came out." The children were aware of this sexual interpretation judging from the laughter and giggles that accompanied the riddle. The girls were too young to participate in the sexual activities described above. Nevertheless, they were well aware of the riddle forms that accompany such sexual activity. Riddles precede sexual activity and appear to be preparatory to the later strategies of sexual explorations.

In the example above, if someone has not provided an answer, a formal 'giving up' exchange would have followed called 'The Fall,' which indicates that someone has lost the competition. According to the rules of riddle games, however, the listener has the right to pose the next riddle. We will begin our discussion of the structures of Quechua riddles with a description of 'The Fall,' the formula for giving up when one cannot arrive at the answer to the riddle, and then we will discuss the levels of complexity in Quechua riddles by using examples of riddles based on sound correspondences, and two other

levels defined by Köngäs Maranda (1971b:119) as simple and complex. The former are based upon analogies constructed from one of each component element and the latter contain one or more of the elements of the riddle multiplied.

4. The Structure of Quechua Riddles

4.1 'The Fall'

The following transcription was recorded between a sixteen- or seventeen-year-old boy (number 1) who had posed the riddle to a younger boy of about fourteen years of age (number 2). Both boys were in the fifth grade. The older one dressed in traditional clothing, was a good musician, and was very active in Vida Michiy. He had greater facility in Quechua than in Spanish. The younger boy, who could not give the appropriate answer to the riddle, did not participate in Vida Michiy, spoke better Spanish, and wore Western clothing. He was just beginning to play the *chintlili*, evidently in an attempt to become integrated into juvenile activities.

- | | |
|---|---|
| 2: Qaqata wichiycusaq. | I am going to fall into the abyss. |
| 1: Arí. Wichiycuy ya! | Yes. Fall now! |
| 2: Ya ... Bundún! Ya'sta. | Ya ... Boom! It is done. |
| 1: Ya. May qaqataq wichiycunki? | Ya. Which abyss did you fall into? |
| 2: Wayunka qaqata. | In the abyss Wayunka. [The word <i>wayunka</i> also means something that is suspended.] |
| 1: Mas o menos hayka metrutataq wichiycuwaq kara? | More or less how many meters would you have fallen? |
| 2: Yaqachiki kilumetruta. | It must have been almost a kilometer. |
| 1: Imayki dañakururanki? | And what part of you did you hurt? |
| 2: Yawarniy machusuta usura. | A lot of my blood gushed forth. |
| 1: Y chay yawarniykitaqa? | And that blood of yours? |

- 2: Allqo mikurun. A dog ate it.
- 1: Y chay allqoqa? And that dog?
- 2: Akaq pasan. He shit.
- 1: Chay akanqa? That shit?
- 2: Aqchi haytaramun ... Aqchi tusparamun. The *dominico* scratched it ... The *dominico* finished it. [Aqchi is a white and black bird called a *dominico* in Spanish.]
- 1: Chay aqchiqa? And that bird?
- 2: Runtuq pasan. He laid an egg.
- 1: Chay runtunqa? And that egg?
- 2: Padre ustukurun. A priest "stuffed" it. [The verb *ustuy* has the connotation of an illicit sexual act on the part of a man.]
- 1: Padreqa? And that priest?
- 2: Resakuchkan. He is praying.
- 1: Reece ... Aaaa ...
- 2: Willawayña ya! Tell me right now!

The content of 'The Fall' varies somewhat but the formula remains constant. A physical and literal fall is constructed in imagery and iconicity, combined with what Ricoeur (1974:102) has referred to as logical absurdity in which a situation is created whereby the participants have a choice of preserving the literal sense, concluding that the whole sequence is meaningless, or attributing a new meaning to the utterances, in this case, 'The Fall.'

If the 'Fallen One' chooses the latter alternative, he or she must generate a series of clever transformations of phenomena beginning with an image of physical injury. In the example above, the defeated party loses blood over the riddle by falling from a high peak into an abyss. His blood is eaten by a dog who transforms the blood into excrement, and the excrement is eaten by a bird

who lays an egg. Finally, a priest uses the egg for aberrant sexual activity and the regenerative cycle comes to a close with the priest praying.

The spirit of competition is maintained by the rhythm of rapid, short responses and the cleverness with which the person who is giving up, or falling, can bring forth vivid images with the transformational cycle based upon the cycle of physiological and sexual regeneration, ending with a situation whereby the movement of transformed phenomena comes to a dead end, usually with a priest who cannot procreate. When the participants are of the opposite sex, the images created are more sexual in character and the competition intensifies.

Note that all of the verbal forms in 'The Fall' are in the past tense or in a context-bound present tense that is interpreted as a kind of recent historical past, with the exception of the last phrase which is in the present progressive. The feeling of movement of the fall is accomplished by the series of transformations of phenomena. This contrasts with the riddles themselves where the feeling of movement is accomplished by the use of the present tense with suffixes which denote movement.

When the vanquished partner gives up and begins the fall, he or she terminates this part of the verbal game with the present progressive tense to signal that it is now his or her turn. Then the roles are reversed and the victorious riddle poser becomes the riddle solver.

4.2 Riddles Based on Sound Rhythm

We have noted that 'The Fall' contains short responses that are rhythmic. We will now examine the simplest form of riddles in Quechua. There are two types, one in which the answer is not rhythmic and the other in which the answer is based on sound correspondences with the riddle itself. Of our sample of 109 Quechua riddles, 42 include rhythm and 49 do not. Ten were variations of other riddles.

All of the riddles in the category in which rhythm is the primary principle of organization are commonly known and are therefore dead metaphors: there are no new revelations codified in imagery, though their sounds give the listener a sense of pleasure. The following five examples are organized in increasing complexity.

Example 1

Riddle: Tillu tillucha

Tillu tillu - cha
* * dim.²

²The following abbreviations are used in the explanation of the riddles: dim. (diminutive), pers. (person), restr. (restrictive), refl. (reflexive), caus. (causative), dir. obj. (direct object), imper. (imperative).

Answer: Puchkatillucha

Puchkatillu - cha
A spindle whorl dim.

Tillu does not have denotative meaning (indicated by *) but native speakers find it pleasurable and say that it brings to mind something small and delicate. The riddle is based entirely upon the rhythm of the sounds in the question and answer.

Example 2

Riddle: Rinki rinki qatisunki

Ri - nki ri - nki qati - sunki
Go you go you follow it to you

You go and go and it follows you

Answer: Llantu
Shadow

This riddle is one of the most commonly known and the rhythm of sound is in the riddle but not in the answer. It too is simple without underlying levels of complexity. There are no logical metaphorical operations demanded. The image is of one's shadow which always follows one.

Example 3

Riddle: Tras tras chakicha
Frazada qepicha

Tras tras chaki - cha
* * foot dim.
or
feet

Frazada qepi - cha
Spanish for blanket dim.

[The verb form *qepiy* means to carry, but in this case it is not marked as a verb but rather is a noun modified by blanket, meaning loaded with a blanket.]

Trot trot feet
Carrying blanket

Answer: Wiqacha

Wiq - cha
dim.

A sheep [which comes from the Spanish *oveja*]

Like example 1, *tras tras* is an onomatopoetic sound that imitates the sound of trotting sheep. The Spanish word for blanket has been used to rhyme with *tras* instead of the Quechua word *lliqla*, the noun for a carrying cloth. This riddle is somewhat more complex in that it ambiguously refers to the thing carried—a blanket which is made from sheep's wool. One has to arrive at the following analogical transformations.

To use the terminology of Köngäs Maranda (1971b:119), the given term of the riddle is something with trotting feet; a false clue is given in relating this animated movement with a blanket that is being carried. The constant that solves the riddle is that both have wool. The animated movement of the sheep is 'wool on the hoof' while the wool of the blanket has been transformed into an inanimate object that must be carried. The riddle also has the opposition of self-motivated movement on the ground versus something carried above the ground (on the back).

Example 4

Riddle: Llaqwan satin
Llaqwan satin

Llaqwa - n	sati - n
Lick 3d pers.	put 3d pers.
Llaqwa - n	sati - n

Lick put
Lick put

Answer: Aguja e hilo

Aguja e hilo
Needle and thread

The rhythm and sound of the words of the riddle resemble the sound of the action of licking the thread and threading the eye of the needle. Underlying this obvious sound image is a sexual metaphor.

Example 5

Riddle: Ventana choqa choqacha

<i>Ventana</i>	choqa	choqa	-	cha
Window	dispersed	dispersed		dim.
	[Implies an action]			

A dispersed window [or a window in the process of being dispersed]

Answer: Chochoqa

[A form of dried corn that is boiled and then placed on the roof to alternatively freeze and dry in the sun]

This is a well-known riddle and therefore a dead metaphor that belongs to the domain of common knowledge. The play on sounds in the question and the answer is obvious. We were unable, however, to derive a paraphrase to explain the use of window in the riddle. There are many words that could be substituted that would provide the same rhythm. The riddle was offered by a twelve-year-old girl and was answered readily by her peer group. The image seemed clear to them, but they were unable to explain to us the relationship between the image of a 'dispersed window' (*choqa*) and *chochoqa* corn which requires being spread out on a roof. They obviously had attained a concrete conception of the riddle but were unable to paraphrase or explain it. On the most concrete levels, the sound *choqa* to Quechua speakers resembles the sound of a small hard object hitting a window—*choqa choqa*. One can think of throwing dried corn kernels against a window to produce the sound. The girls were unable to explain how this sound was related to the answer, however.

All the riddles discussed above use sound rhythm to construct images. Examples 1 and 2 are simple images, and example 3 contains at least one logical transformation that must be performed—blanket—wool—sheep. Example 4 calls forth two images, one of threading a needle that then refers metaphorically to sexual intercourse. The level of complexity of example 5 is unclear because one is not sure what levels the participants are able to bring forth in their imagination. In section 6 we will argue that the levels of transformational complexity of riddles are perceived according to the cognitive development of the participants. At the simplest level, one makes a clear connection with sound and the image that those sounds bring forth, or one makes a metaphorical connection between two terms. At a more complex level, more complex cognitive operations are required to simultaneously arrive at a multitude of relationships between a multitude of possible terms.

In order for the child to be able to arrive at such complexity he or she must

first learn the rules for riddle formation and transformation. They must also learn appropriate 'plots' and strategies for forming possible or 'good' analogies. Thus they learn the rules for constructing the appropriate structures from appropriate cultural content. The riddling process is a way to make discoveries about similarity and oppositions. The first step is to learn to transform simple analogies.

4.3 Simple Riddles and Their Transformations

The following two examples of simple riddles are based on the relationship of inside to outside. It is one of the easiest to learn, which perhaps accounts for the fact that it is widely known. The relationships of inside to outside are inverted. The transformation is a simple one to learn as well as a common model for the construction of new riddles.

Example 6

Riddle: Hawallan achachaw
Ukullan añallaw

Hawa	-	lla	-	n	achachaw
Above or outside		restr.		3d pers.	[An expletive which connotes pain, something ugly or disagreeable]

Uku	-	lla	-	n	añallaw
Inside		restr.		3d pers.	[Also an expletive in reaction to something sweet, good, or pleasurable]

Outside it is disagreeable
Inside it is agreeable

Answer: Tunas
Cactus fruit

Example 7

Riddle: Hawan añallaw
Ukun achachaw

Hawa	-	n	añallaw
Uku	-	n	achachaw

Outside it is agreeable
Inside it is disagreeable

Answer: Aji

Hot pepper

The next two examples are structural transformations. The first is a well-known riddle, while the second was given to us by a very creative twelve-year-old girl. It is possible that she created the riddle using the model of example 8 to construct example 9. We have no other instance of example 9 in the data. She recited the riddle in an aberrant situation, however, because there was not another participant to answer. She told us that she had a good riddle to tell us that we would not guess. Indeed, that was the case, and she had to provide the answer. If she did not create example 9, she was at least constructing a simile: the widow is like a shadow.

Example 8

Riddle: Puka rumi mana uqariy atina

Puka	rumi	mana	uqariy		ati	-	na
Red	stone	no	to grab, grasp, or lift		to be able		possibility

A red stone that is impossible to grab, grasp, or lift

Answer: Nina

Fire

Example 9

Riddle: Huq viuda manaña apiy atina

Huq	viuda	mana	- ña	apiy		ati	-	na
A	widow	no	now	grab, grasp		to be able		possibility

A widow who is impossible to grab or grasp

Answer: Sombra

Shadow

The two riddles follow the same form. The image given of the widow, moreover, is that she was 'within reach' at one time but now she is not. The connotation is sexual owing to the prohibition placed upon women who are in mourning. The widow dressed in black is like a shadow that one cannot grasp.

Since we are uncertain whether the twelve-year-old girl created the above riddle, we will now turn to four examples of improvised riddles. From the total corpus of data we are sure that seven riddles were created spontaneously. We will begin with an example of an unacceptable metaphor and then describe

the interactional context within which acceptable or 'good' metaphors were created.

4.4 The Creation of Riddles

The following example was created by a fifth grader who was sixteen or seventeen years of age. His dominant language was Quechua and his dress traditional.

Example 10

Riddle: Waqna pampapi huq
Machucha ... uyvunakuchkan

Waqna	pampa	-	pi huq	machu	-	cha ...
That	flat place		in one	old man		dim.
						[disrespectful]

uyvu	-	naku	-	chka	-	n
from <i>huevo</i> ,		a mutual	-ing	3d pers.		
Spanish for egg		action				

In that flat place, one little old man [long pause] is having sex [with someone else].

Answer: Allqu
Dog

In posing this riddle, the young man began with a standard opening which creates a specific spatial image. But he could not quickly think of a second line and paused. Then he added *uyvunakuchkan* which, roughly translated, means that the old man is having sex. The listeners could not think of an immediate answer because the possibilities were too numerous. They asked what category the answer belonged to, and the riddle poser answered: 'things of animals', which did not reduce the possibilities. Any answer was possible. He had to provide the answer: dog. The participants were not too impressed with his new riddle. It was not even a 'bad' metaphor. It was not a metaphor at all because he had not followed any of the rules for riddle formation.

Having received such an unappreciative reception, he offered another riddle that brought appreciative laughter from his listeners.

Example 11

Riddle: Waqna pampapi yana
Mula qaparkachachkan

Waqna pampa - pi yana
That flat place in black

Mula qaparkacha - chka - n
Mule to yell brutally -ing 3d pers.

In that flat place a black mule is yelling brutally.

Answer: Cura
Priest

No one could guess the answer. He had to give the category clue that it was of human things. No one could think of the answer and when he provided the image, it was greatly appreciated. The analogy of a priest with a braying mule is appropriate in view of the folk belief that priests are stubborn, stupid, and complaining. The image of the braying mule is associated with a praying priest. The new riddle is not very complex, as it is based on one simple simile, but it is 'clever and socially relevant.

During one session of recording riddles, a group of males ranging from fourteen to twenty-four years of age exhausted all of the riddles they could think of and the oldest began to improvise. The following two riddles were created in response to one another and they followed upon two commonly known riddles which have sexual connotations. Example 12 was posed by the oldest participant, a twenty-four-year-old bachelor and answered by a fourteen-year-old boy.

Example 12

Riddle: Waqna munte wayquchamanta
Uchuychalla turucha
Taka sikicha piña piñacha
Qawachakamuchkan

Waqna munte wayqu - cha - manta
That forest ravine little (dim.) from

Uchuy - cha - lla turu - cha
Small dim. restr. bull dim.

[With the suffix -cha, small is reduced to very, very small.]

Taka siki - cha piña piña - cha
Without tail behind dim. angry [very very, due to the dim.
duplication of the
adjective]

Qawa - cha - ka - mu - chka - n
 Look [The suffixes -chakamu- together -ing 3d pers.
 indicate a delicate action which
 occurs in another place.]

From that little forested ravine a 'little bitty' very very angry bull is
 peeking out.

Answer: Verga
 Penis

[*Verga* is a slang term in Spanish taken from the word for a club made of
 the penis of a bull.]

The sixteen-year-old paused and asked, "Well, what could it be?" The four-
 teen-year-old quickly provided the answer: a penis, but with yet another
 metaphor, *verga*, which is a common slang term for penis which is a club
 made from the penis of a bull.

The sixteen-year-old decided to try his hand at inventing a puzzling riddle
 for his friends. He created the following:

Example 13

Riddle: Huq (mmm) huq machu
 Chilli pillun sawaychayuq

Huq (mmm) huq machu
 One one old man

Chilli	pillun	saway	-	cha - yuq
Sparse	a saddle blanket	intertwine		dim. with
	with loose	[sawa also means		[possession]
	fibers	dowry]		

An old man with a sparsely intertwined saddle blanket

Answer: Pisqo
 Penis

The fourteen-year-old asked the standard question, "And what things follow
 it?" The answer was, "only human things of the liking . . . to women." With
 that clue, the fourteen-year-old boy quickly answered—penis! The
 image given is that of pubic hairs being similar to the loosely woven saddle
 blanket. Moreover, an additional clue is given with the verb *saway*, used
 frequently to refer to a married couple as being intertwined. Furthermore, the
 noun form, *sawa*, means dowry.

Most of the innovative riddles we have collected are sexual in content and it is our impression that during Vida Michiy sexual metaphors are the most common (and the most appreciated!) owing to the competitive social context. Nevertheless, we must add that none of the innovative riddles collected were recorded during Vida Michiy, for obvious reasons.

The riddle in example 12 posed by the twenty-four-year-old bachelor appears more complex linguistically than the common ones discussed earlier. A lot of the complexity of his riddle, however, is derived by simply lengthening the utterances with intensifiers. Nevertheless, the analogy of a penis as a bull is not a common metaphor. The instance given in example 12 is the only case in our data. The metaphor of a ravine is generally used for the genital area of a woman. He had appropriately supplied a false clue combined with a new metaphor to create a 'good' riddle.

4.5 Complex Riddles

We would like to end our examples with two well-known riddles which we consider complex because they require multiple comparison of several terms.

Example 14

Riddle Ojetiyta pukuy
Akayta mikuy

Ojeti - y - ta puku - y
Ass my dir. obj. to blow imper.

Aka - y - ta miku - y
Shit my dir. obj. to eat imper.

Blow on my ass, eat my shit.

Answer: Manka
Cooking pot

The clue given, if one does not know the riddle, is that the answer belongs to the domain of food. The icon created is that of blowing on the bottom of a cooking pot and eating what comes out of it. The clue given directs the puzzle solver toward the direction of thinking of an analogy which requires a similarity between transformed food via digestion and transformed food via cooking. The common ground between the images is the abstract notion of transformation.

Example 15

We have seen that riddle complexity progresses from simple rhymes (examples 1 through 5), to riddles based on similes and structural oppositions (examples 6 through 10), and finally to complex riddles requiring the comparison of several categories at one time. Another aspect that can be noted in the examples given is the increase in sexual content of the riddles. This is not surprising given the social context within which riddle games are found. Quechua riddle games are directly related to sexual socialization.

5. The Role of Metaphor in Cognitive and Semantic Development

5.1 *Metaphor and Cognitive Development*

In a recent review of current research in cognitive development, Ginsburg and Koslowski (1976:42) note that the study of the development of humor has been receiving increasing attention as a factor in producing cognitive conflict and subsequent cognitive development owing to the apprehension of incongruity. Riddles are puzzles to be solved. We have explained the social context of Quechua riddles as one in which sexual conflicts are also resolved. Ginsburg and Koslowski (*ibid.*, p. 44) suggest that the sharing of a humorous situation is an example of a very rewarding form of social communication and intimacy. The analysis of the social context of Quechua riddles supports this assertion. We would like to add that social riddle games, such as those described here, serve as verbal media for cognitive development in preliterate societies. Humor and formal verbal games, such as riddles, deserve further investigation by scholars interested in cross-cultural cognitive development.

As mentioned in the introduction, Quechua riddles are linguistically anomalous: they lack the obligatory markers of common discourse which relegates them to the realm of ambiguity. This absence of obligatory markers linguistically signals the participants that semantic categories are ambiguous in riddles. In order to solve the puzzle posed, one must search for new relationships between the elements of the riddle either by utilizing classification of similarity (*simile*) or of opposition/negation, or by simultaneously comparing several classes or subclasses to construct a new class.

Inhelder and Piaget (1969) have argued that these three classificatory operations correspond to the ongoing cognitive growth of the child. During the concrete stage, roughly between ages seven and eleven, a child is capable of utilizing classes, relations, and numbers as well as mentally reversing classes and subclasses so that any point in a system can be reached regardless of the starting point. These cognitive operations concentrate upon the concrete situation of the real world, thus the name concrete operations (Furth 1972: 280).

Furth goes on to argue that the next stage, known as formal operations, is one in which the previously developed concrete operations function as a basis for further cognitive growth. Formal operations begin to develop at around eleven or twelve years of age; this is the age the Quechua children under study begin active participation in riddle games. Formal operations involve mechanisms which concentrate on the possible and hypothetical, rather than on concrete situations, Furth argues. Propositions comparing several terms at once are understood such that a child can at this stage comprehend statements of the kind A:B::C:D. In riddling the proposition is further complicated by

leaving out at least one of the terms. In example 15 the proposition is stated thus:

$$A_a:B_b:C_c:D_d$$

A is the old black woman; B is the old black man; a is the action of making herself angry; b is the action of the man causing calm; and C_c and D_d are the answer to the riddle.

The riddle solver must construct the appropriate analogy by combining the terms A_a and B_b simultaneously in order to arrive at the appropriate answer. The combination of these terms creates the figurative representation that provides the answer, which is in turn another analogy referring to the motions of a man and a woman during sexual intercourse. A boiling cooking pot and a stirring ladle are therefore analogous to A_a and B_b .

It is our argument that while riddles usually deal with phenomena that are concrete and have a figurative function which "stresses knowing which focuses on the static configuration (hence figurative) or content of sensory input" (ibid., p. 281), they also allow for various levels of operative knowing to be expressed. It is the constant interaction of these two types of knowing (figurative and operative) that encourages the riddle participants to expand their cognitive horizons.

A child might only understand simple riddles based on similarity of two terms by identifying common attributes or perhaps only those based on opposition (i.e., negation) such as examples 3 through 9. Or, as seen in example 5, a riddle answer can be learned without the ability to explain the relationships involved. The level of understanding is dependent upon the level of operative structures the child has attained. Appreciation of metaphors precedes comprehension. Production of simple metaphors precedes complex metaphors. A child's use of metaphor, however, must be examined from the point of view of the interaction between figurative knowing and operative knowing.

In the introduction, the difference between 'ordinary' language and 'figurative' language was discussed. Metaphor clearly is a powerful tool of figurative language. Moreover, the relationship between figurative language and cognitive development has been viewed as of little importance by cognitivists. Furth (ibid., p. 296) argues that: "Although symbolic functioning is necessary in the development of concrete operations, verbal language per se is neither a sufficient nor a necessary determiner nor is it a preferred medium of intellectual growth. Only when the mind is developed to the formal operational stage is propositional language (natural or artificial) the principal medium to articulate and challenge formal operational thinking."

As we examine verbal media such as riddle games, we see that the

development of formal operational thinking is under construction. Insofar as the riddles are found within a competitive social context among adolescents, propositional thinking and underlying available cognitive structures are constantly challenged by the interaction of participants at different levels of operative functioning. Furthermore, one must examine the interaction of riddle poser and listener. As our informants assert, one cannot tell riddles—one must have a listener to solve the puzzle. The game is a display of intellectual capacity coupled with sexual exploration which is an added incentive for cognitive growth. For the Quechua themselves say that the people who are best at riddles and song composition are smarter than anyone else and, moreover, they prove to be the best sexual partners.

We have documented the onset of riddling behavior at about eleven or twelve years of age, which is also the time adolescents begin to become interested in *Vida Michiy*. As seen in example 5, appreciation for riddles begins before full comprehension of the more complex metaphorical relationships is reached.

Helmer (1972) maintains that children do not engage in metaphorical statements before age eleven or twelve. There is counter evidence, however, to Helmer's assertion. Billow (1975) differentiates between metaphor of 'similarity' based on shared attributes, and metaphor of 'propositionality' which is defined as the ability to formulate a statement such as A is to B as C is to D, supplying one of the missing terms. Testing comprehension levels of fifty children between ages five and thirteen, he found that metaphor comprehension is a kind of classificatory behavior and begins much earlier than hitherto supposed. Five-year-olds comprehend an average of 3.5 out of 12 similarity metaphors (29 percent) while seven-year-olds comprehend an average of 7.9 out of 12, or 66 percent. Significant rise in proverb comprehension was found among the eleven to thirteen age group as compared with the nine to eleven age group, suggesting growth of cognitive structures even though Billow's formal combinational tests did not bear out this observation. In his study it is apparent that the standard tests themselves do not tap the relationship between figurative and operative thinking.

Duplicating Billow's study is one by Cometa (1976), where comprehension is defined as the ability to explain the metaphor. With a sample of sixty children ranging from kindergarten to the eighth grade, he administered standard tests and found that only when children had fully developed the ability to intersect two subsets and draw a new set from the combination of the characteristics of the two, could they explain metaphors. He hypothesized that the inability to consider more than one property of an element (or what is called centering) militates against the comprehension of metaphor. He concludes that semantic growth consists of the child's progress in being increasingly adept at the incorporation of alternate referents, and that such develop-

ment reflects qualitative changes in the structuring and use of information. Production precedes comprehension.

Perhaps one of the most striking studies that demonstrates the early appearance of metaphorical statements is the research by Stross (1975) describing a play situation of two Tzeltal-speaking children ages six and two and a half. His argument is that play is analogous to metaphor in the sense that they are both 'world creating'. He states that "metaphor too creates cognitive worlds of make believe or worlds in which reality is expressed in alternative and unusual ways . . . metaphor is 'world creation' of a specific kind and is tied only to language" (ibid., p. 307). He concludes that metaphors of young children will tend to be more frequently based on analogies involving shape and texture than analogies involving function or activity (ibid., p. 321). Such a conclusion suggests that the growth of semantic boundaries follows the same lines of development.

5.2 *Metaphor and Semantic Development*

Stross's conclusion that young children's metaphors are based on analogies involving shape and texture is in agreement with Rosch's (1973) argument that certain psychological categories, such as color and form, have an internal structure which develops around perceptually salient 'natural prototypes'. She gives the following examples: for English speakers, some breeds of dogs serve as a more representative example of the category 'dog' than do others—a retriever is a better prototype of the category dog than a Pekingese; likewise, within the domain of the color red, some colors are 'redder' than others. Rosch hypothesizes that 'natural prototypes' generated by salient stimuli become the organizing principle for category construction with generalization following.

In order to test the hypothesis, Rosch used young adults of the Dani tribe, who have two color terms based on brightness. The Dani subjects found it easier to learn color names for natural prototypes. Rosch then turns to non-perceptual natural semantic categories like disease, crime, science, fruit, and so forth, and found that among young adult North American subjects agreement is high as to which entity is the clearest or best example of the categories. Murder is the clearest example of crime and chemistry the best example of science. She concludes that these categories have "artificial prototypes" organized in the same fashion as natural prototypes. Ginsburg and Koslowski (1976:33) suggest that these 'artificial prototypes' are socially determined.

Similar conclusions were reached by Anglin (1970) who began with the well-known observation that young children respond to the word 'dark' with 'night', whereas older children and adults associate 'dark' with 'light'. Anglin concludes that a gradual process of increased abstraction is begun around eight

years of age. In studying children's response to word stimuli, he found that most responses of children bear specific relation to their stimuli. Most were formed via bipolar contrasts and/or included members belonging to the same specific conceptual category. Rather than viewing abstractness as based on a set of nested features, Anglin (*ibid.*, p. 98) concludes that the degree of increasing abstractness is based on a notion of shared features. The slow progression toward abstraction involves differentiation first and then generalization.

As Stross has suggested, the role of metaphor in semantic development appears to be that of expansion of the productivity and flexibility of language. It is possible that verbal play, such as that described in this paper, functions as explorations of the fuzzy boundaries of semantic categories. Riddles appear to be games of classification based on similarity of attributes, negation, opposition, and finally propositional statements about the hypothetical world. The answer to the riddle discussed in example 3, the interaction between a child and an adult, is based on similarity of form—an egg with hairs is like a mango—a conclusion founded upon similarity of form. The riddles in section 4.2 are based upon rhyming, which is also perceptually salient. Examples 6 and 7 combine a knowledge of the perceived world (i.e., taste) with the logical operation of opposition. Examples 8 and 9 are based upon an analogy of a negative quality, that is, phenomena that cannot be grasped—a red stone (fire no. 8) and a widow (shade no. 9). The more complex riddles that follow include function and action as components of semantic categorization. Furthermore, many of them require the formulation of propositional equations. Riddling is a way of expanding and experimenting with semantic boundaries and relationships. Perhaps children begin with 'natural prototypes' and experiment to discover the various possibilities for inclusion of membership within categories. The process is a dialectic between figurative knowing based upon perception of the real world and operative knowing based upon developing operative structures. The level of comprehension of any given child depends upon the level of operative structures the child has attained.

One aspect that must not be overlooked in the discussion of the role of metaphor in semantic development is the dynamic interaction between speaker and listener. Olson (1970:264) argues that words designate, signal, or specify an intended referent relative to a set of alternatives from which it must be differentiated. The growing child must base such differentiation upon his knowledge of the world. As that knowledge changes and increases, so do the boundaries of semantic categories. The process is a dialectical one. As Olson states (*ibid.*, p. 260), "... it is impossible to specify the meaning of a word or a sentence unambiguously unless one knows the context and hence the set of alternative referents being entertained by the listener." The dialectical process is between the speaker and listener as they each structure their knowledge about the world within a specific context.

The context of riddle exchange is especially interesting in that the verbal game involves purposeful manipulation of ambiguous boundaries and the creation of new structural relationships between semantic domains. The end result is that participants must 'stretch' their semantic boundaries and develop strategies for discovering new relationships between semantic domains. 'Good' metaphors generate new insights about one's cognized world.

6. Riddles as Discovery Procedures

"Knowing about metaphor means knowing how to organize the universe within our minds. . . ." (Worth 1974:208). Organizational principles are discovered within the context of riddles by creating a collision of meanings caused by a clash between literal meaning and metaphorical meaning created by the montage of related images (see Ricoeur 1974 and Worth 1974). The knowledge that is manipulated is always cultural knowledge. In riddle construction there is a contrast between 'dead' metaphors, based upon knowledge that is held in common, and live or innovative metaphors that bring to mind new insights about familiar phenomena. Riddles are always designed to surprise the listener who does not know the answer. Once the answer is given, new relationships are available for the construction of yet other novel perspectives.

One of the major disputes in the philosophical literature on metaphor is whether the process of constructing metaphors deals with simple *substitution* of some literal expression for some other literal expression, or whether there is a change or extension of meaning brought about by the *interaction* of the two meanings (Black 1962:31-47; also see Shibbes 1971). An interactionist view is more in agreement with the position that is taken here concerning the development of semantic categories. It is possible, however, that substitution precedes interaction in the ontogenesis of metaphor in Quechua riddles. To conclude, a hypothetical model of metaphor ontogenesis within the context of Quechua riddling is offered.

7. A Hypothetical Model of Metaphor Ontogenesis within the Context of Riddle Construction

It appears that riddle posing among Quechua speakers serves an important cognitive function. As a child acquires the ability to entertain the possibility of alternate referents and alternate relationships between phenomena, he or she becomes attracted to the verbal genre which presents alternate referential relationships. For the Quechua, riddles offer such an opportunity. Furthermore, the intimate and intensive interaction of Vida Michiy provides an impetus for cognitive growth.

The following hypothetical model is proposed. Over half of the riddles that we collected are based on sound correspondences and rhyme. Many of these are common riddles and therefore 'dead' metaphors; furthermore, the majority are simple similes. Examples 1 and 2, for instance, are images 'painted in sound'. There are no complex logical operations involved. We hypothesize that these types of riddles are the first that attract younger children. The pleasure of the rhyme and rhythm is a nonanalytical function that is processed by the right side of the brain (Laughlin and D'Aquili 1974 and Hewitt 1976). These kinds of sound games are similar to the word magic and rhyming games universally played by young children. They provide motion in sound, an aspect that becomes more complex in the propositional metaphorical riddles which include motion. We have noted that the complex riddles often denote reciprocal action, with repetitive, surprising, or continuous motion as key elements. In other words, Quechua riddles begin with the perception of sound (rhyming) and develop into more abstract knowledge about motion.

The second level in the development of metaphor comprehension requires bipolar classification and classification based upon similarity. This development leads to the expansion of semantic domains whereby more and more peripheral meanings are realized. Perhaps children at this stage are discovering new semantic relationships utilizing 'natural and artificial prototypes'. Within the data presented on Quechua riddles one can recognize the opposition of animal to human, inside to outside, male to female, food to excrement, animate to inanimate, above to below, pleasure to pain, and many others. More complex relationships are expressed as well: continuous action as opposed to a static state, aggressiveness as opposed to passivity, and such aspects of phenomena as the opposition of being illusive or concrete (the shadow and the widow) as expressed in example 9. The bipolar oppositions and relationships are thereby operated upon to construct the formulation of analogies.

The last level of riddle formation we have classified as complex ideally includes propositional puzzles about the hypothetical and the possible. What appears to be happening is that an image of concrete phenomena is given (see examples 14 and 15) but one must simultaneously compare several terms and solve a propositional equation. The answers to these riddles require both figurative knowing and operative knowing. As discussed in section 4.5, one must know that food is transformed both by digestion and by cooking and arrive at the conclusion that these processes are analogous. To the child who first discovers this relationship, a new view of the world is revealed.

The last riddle (example 15) combines four terms and a complex analogy is constructed whereby the puzzle solver must combine all four terms in a propositional manner. Furthermore, the two concrete entities (the old black woman and the old black man) are attributed with motions (being angry and causing calm). The combination is a metaphorical statement referring to sexual

intercourse between the old man and woman. The motion of a boiling cooking pot and a stirring ladle is seen as analogous to the differential sexual roles of the female and male during intercourse. Again, the riddle utilizes concrete images and knowledge to construct a propositional statement. Figurative and operative knowing interact and the riddle provides the child a discovery procedure for investigating semantic relationships relevant to his or her culture. Quechua riddle games are an excellent example of what Flavell (1974) has called applied cognition.

Quechua speakers say that good riddle posers are more intelligent. Their native intuition is probably correct. It would be valuable to test our hypothetical model of ontogenesis of metaphor in order to document the role metaphor plays in the expansion of semantic categories and cognitive growth.

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