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lacks Indians. Though the illustrations compensate for this deficiency, they also whet the appetite for more information on the works and artists shown.

But such criticisms should not minimize Schrader's accomplishments. The subject is fresh and important to an understanding of the overall Indian New Deal scheme of things. Moreover, his book stands as a corrective to the recent tendency to concentrate on the debit side of Collier's record, by reminding us of the many innovative achievements of policy in the 1930's, and the challenge offered by Collier's commanding vision of a New World "ethnic democracy."

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**Hopi Time: A Linguistic Analysis of the Temporal Concepts in the Hopi Language.** By Ekkehart Malotki. Berlin, New York, Amsterdam: Mouton Publishers, 1983. 667 pp. \$100 Cloth.

Almost five decades ago Benjamin Lee Whorf characterized Hopi as a language that makes no reference to time. Whorf claimed that Hopi did not base temporal metaphors on spatial terms, that Hopi temporals were not used like nouns, and that Hopi did not characterize time as a region in the temporal domain (Malotki, p. 631).

However, Malotki points out Whorf based his tantalizing conclusions on too little data (p. 526). Moreover, there was no other adequate body of Hopi data with which to evaluate Whorf's claims (p. 628). In this book, Malotki has thoroughly documented the grammatical elements of Hopi that relate to the abstract domain of time. In the light of these data, he has examined Whorf's conclusions and found many of them wanting. And he has done so convincingly.

Besides refuting Whorf, Malotki presents a thorough survey of how the Hopi treat time linguistically and preserves for us a considerable collection of data on the Hopi language and culture (p. 630). He has done a meticulous job of analyzing and presenting this data, much of it previously unrecorded (p. 629).

Malotki's analysis of Hopi spatio-temporals covers the full inventory of temporals themselves. It also treats numerous derived

forms and describes how both simple and derived forms combine with other grammatical elements. Malotki's analysis of temporals in Hopi is broader in scope than any similar study I have seen to date. The depth of detail in his analysis is almost overwhelming and overshadows by far the usual treatment of temporals in the literature. For example, Paul Friedrich (*The Tarascan Suffixes of Locative Space*, 1971), in his excellent study of Tarascan spatial suffixes barely mentions temporal notions. Eugene Casad, in his 1982 dissertation, (*Cora Locationals and Structured Imagery*) cites occasional extensions of spatial concepts into the temporal domain for Cora.

Malotki begins with a discussion of the distinctive spatial orientations that are signalled by the 'primary locators' (p. 16). These are built on pronominal bases and reflect the "elementary concepts of location, goal and source" (p. 22).

Although Malotki refers often to the 'local case' notions of 'source' and 'goal,' he does not mention the related notion of 'path,' which may also be construed as a 'local case.' The notion of a directed path is clearly a part of the meaning of Hopi spatio-temporals. Some examples include *àatsave* 'at the time in between' (p. 121); *sunàasava* 'equally long/of the same length' (p. 134); *-say* 'quantity/size' (pp. 162-165); *tsaava* 'short' (p. 170); and the noun *quatsi* 'lifespan' (p. 179).

Furthermore, 'source,' 'goal,' 'path,' and even 'location' are part of the meanings expressed by a broad range of grammatical elements in Hopi. For example, 'goal' is expressed by the destinative case markers (p. 21), by the set of destinative pronominal locators (pp. 24-25), by the accusative on forms such as *katsinti-qay* (p. 88), by the demonstrative proadverbial *pàasavo* (p. 137), and by the postposition *-vo* 'goal' (p. 171).

Rather than view 'source,' 'goal,' 'location,' and 'path' as local cases, I suggest that they represent aspects of a primitive conceptual schema in which the path is highlighted through its end points and the region in between (cf. George Miller and Philip Johnson-Laird, *Language and Perception*, 1977:90). This alternative analysis is analogous to the universal characterization of tense that Malotki gives on page 624.

Malotki characterizes his work on a number of topics as "linguistic archeology." Although the data on such topics is sometimes limited, much of what he has amassed should interest students of American Indian cultures in general. For example, the most prominent calendar units include the day, the month,

and the seasons (p. 237). Quite refined temporal calculations were based on observing both the positions of the sun during its daily course and the distinct stages of lighting before dawn and after sunset (chapter 2). Points along the horizon where the sun rose and set were selected as landmarks for judging the timing of events in the crop cycle (p. 429).

Chapter 5 concerns the schedule of rituals that are observed during the course of the calendar year. It represents a good summary of ethnographic sources, data, and interpretations of Hopi ritual.

Chapter 6 is devoted to various time-keeping devices. These include a knotted calendar string (p. 484), a notched calendar stick (p. 488), and sets of holes in a wall which at certain times were aligned with the rays of the sun (p. 491). Finally, Hopis can judge time by characteristic configurations of shadows.

Malotki very nicely identifies the influences of English patterns on the Hopi examples he cites. He also gives an interesting evaluation of the state of the Hopi language *vis a vis* the encroachments of modern western society (pp. 616–622). Malotki's use of the label NEO on example 4 of page 361 suggests that example 3 on page 219 should be identified as a neologism also, since both examples contain a clear borrowing from English.

Malotki's analyses are straightforward and credible. In a few places, data from other languages can refine his statements. Thus, the vertical up-down orientation that Malotki observes for Hopi (p. 120) is not really as rare as he implies. Within Uto-Aztecan, Cora, Huichol, Southern Tepehuan, Guarijio, and Papago all employ it for spatial orientation at least. Cora and Southern Tepehuan show some extensions into the temporal domain.

The use of certain temporals to refer to both antecedent and posterior time is more widespread than just Hopi. Cora shows an analogous phenomena with pairs such as *ú ru'usi* 'last year' and *ru'usi* 'next year'; *ú hua'a* 'the other day' and *hua'a* 'in the future.' Cora also counts time backwards and forwards up to a limit of four days.

Many of the lexical items that Malotki discusses have both nominal and verbal characteristics. He usually points this out, but occasionally he errs in trying to make his analyses appear too distinct from those of Whorf. In particular, Malotki analyzes *tapki* 'it got to be early evening' into the root elements *ta(a)*- 'light' and

a contracted form of the intransitive verb *paki* 'he went in/he entered' (p. 303). He gives several arguments to support the verbal nature of *tapki* (pp. 304–305). He notes that *tapki* may also take both the destinative case suffixes. This could be construed as a clue about the nominal side of *tapki* (cf. p. 245). However, Malotki invokes a zero 'nominalizer' at this point (p. 307). If *ta(a)*- 'light' is actually nominal in nature, there is no need to invoke a zero 'nominalizer' in order to account for its syntactic behavior.

He cites the perfective form *tapkina*, which employs the causative suffix *-na* and is glossed 'he made it to early evening/reached early evening' (p. 307). This construction can also be construed as reflecting the nominal nature of *ta(a)*- in *tapki*. Note that he considers the occurrence with *-na* 'causative' to be a plainly nominal characteristic earlier when discussing the stem *tal-* as it occurs in the derived form *talna*, 'he spent a day' (p. 252). An analysis that recognizes that *tapki* has both a verbal and a nominal side is parallel to analyses of related forms, restricts the morphemic analysis of *tapki* to fully overt grammatical structure, and avoids the use of a zero 'nominalizer.' Finally, since Malotki's morphemic analysis of *tapki* includes both a nominal root and a verbal stem, the attributing to it of both nominal and verbal semantic properties in no way undercuts the distinctiveness of his alternative to Whorf's analysis.

Malotki's use of a zero 'nominalizer' also appears in the analysis of the form *uyis* 'at planting time,' which is related to *uuyi* '(corn) plant' (p. 393). He shows that, as a composite structure, *uyis* has several verbal properties. In addition, *uyis* may take the two destinative case markers, a clearly nominal characteristic. Again he involves a zero 'nominalizer' (p. 394). However, Malotki gives ample evidence for the morphemic status of *-s*. The *-s* of *uyis* is the same as that of *tuho'os* 'harvesting time' and, possibly, that of *yas* 'last year' (p. 393). The contrasting accusative form *uuyit* (p. 404) further suggests that the *-s* of *uyis* is analyzable. Finally, on both morphological and semantic grounds, the *-s* of *uyis*, *tuho'os*, and *yas* may well be associated with the multiplicative *-s* (p. 503). In particular, multiplicative *-s* functions to locate an event or entity in the numerical domain. It can occur with the numerical stem *suu-* 'one,' giving an adverbial meaning 'one time/once' (p. 504). Thus, multiplicative *-s* does not always require a multiple object. Planting season and harvesting season are inherently cyclic events. This also makes it plausible

for multiplicative -s to suffix to *uuyi*. Finally, if the -s of *uuyis* is actually an adverbializing element, that could account for both the verb-like and the locative case-like properties of *uuyis*. The nominal characteristics of *uuyis* would also surface without the need to resort to a zero 'nominalizer.' All of this falls out from a recognition of the componential morphological and semantic structure of *uuyis*.

Beyond the wealth of linguistic and cultural data this book contains, there is much to commend in Malotki's work. His insistence on the centrality of metaphor in human cognition is welcome (p. 13), as is his call for using the vernacular as the primary tool of ethnological research (p. 631). Having demonstrated that Hopi does exploit the temporal domain linguistically, Malotki shows his balance by pointing out that Hopi temporal reality is not the same as ours, either (p. 632). In summary, Professor Malotki has done an excellent job. His book promises to be a valuable source for various kinds of studies, both cultural as well as typological, since many of the observations he makes for Hopi are related to phenomena in other Amerindian languages. Finally, Professor Malotki's book contains a solemn warning about the dangers of letting our theoretical presuppositions determine the way we perceive the data that confronts us.

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**American Indians, American Justice.** By Vine Deloria, Jr. and Clifford M. Lytle. Austin: University of Texas, 1983. 262 pp. \$19.95 Cloth, \$9.95 Paper.

**The Nations Within: The Past and Future of American Indian Sovereignty.** By Vine Deloria, Jr. and Clifford Lytle. New York: Pantheon Books, 1984. 293 pp. \$10.95 Paper.

This writer has longed for a fresh analysis of trends in federal-Indian law, one evidencing a scholarly mastery of important historical details, but more importantly, a *practical* understanding of what these signify, and what long-established patterns may suggest about the future. The field does not need another