Arm Angles in American Sign Language: A Study of Proximal Articulation in Signed Discourse

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PREFACE: CONTEXT, SCOPE, AND EXPECTATIONS

Who This Book Is For

This book is written for advanced learners of American Sign Language who have moved beyond vocabulary acquisition and basic sentence construction but sense that something remains elusive in their signing. It is for the interpreter who produces grammatically correct ASL yet receives feedback that their signing looks "stiff" or "English-influenced." It is for the heritage signer returning to deeper study of a language learned partially in childhood. It is for the ASL instructor seeking a framework to explain aspects of fluent production that feel intuitive but resist articulation. It is for the linguistically curious signer who wants to understand not just what to sign but why the body moves as it does when signing well.

The common thread among these readers is dissatisfaction with surface-level competence. You know the signs. You understand the grammar. You can communicate. But you recognize that native signers move differently, that their signing has a quality yours lacks, and that this quality has something to do with how the arms move through space, not merely what the hands do when they arrive.

This book addresses that gap.

What This Book Assumes

This text assumes you possess working knowledge of ASL vocabulary, grammar, and discourse conventions at an intermediate level or above. You should be comfortable with the following concepts before proceeding:

Phonological parameters. You understand that signs are composed of handshape, location, movement, palm orientation, and non-manual markers, and that changing any parameter can change meaning.

Spatial grammar. You understand that ASL uses locations in signing space to establish and track referents, and that verb agreement involves movement between established locations.

Non-manual markers. You understand that facial expressions, eye gaze, head position, and body posture carry grammatical information including question marking, topicalization, negation, and conditional structure.

Register variation. You understand that ASL, like all languages, varies by context, and that formal and casual registers differ in systematic ways.

Basic anatomy. You can identify your shoulder, elbow, wrist, and the general direction of movements like flexion, extension, and rotation. Detailed kinesiological knowledge is not required; the text will provide what you need.

If these concepts are unfamiliar, consult an introductory ASL linguistics text before proceeding. This book builds upon that foundation rather than establishing it.

What This Book Does Not Include

This book contains no photographs, illustrations, or video links. This is a deliberate choice, not an oversight.

The book assumes you are an advanced learner who knows what a flexed elbow looks like and can visualize forward arm extension. You do not need a diagram to understand the signing space in front of your body, because you have been signing in that space. What you may lack is the conceptual framework that explains why arm positioning matters, how it carries meaning, and when to deploy different configurations deliberately rather than unconsciously.

This book provides that framework through prose explanation, analytical discussion, and structured exercises. The absence of visual media focuses attention on the cognitive and linguistic dimensions of arm positioning that visual demonstration alone cannot convey.

Of course, learners differ in visualization ability, and video demonstration has pedagogical value. If you benefit from visual models, supplement this text with any ASL dictionary video or recordings of fluent signers. Record yourself and compare. The text provides the analytical framework; you can supply the visual reference from the wealth of ASL video content available.

Future editions or companion materials may include video resources. For now, the text stands alone, and it is sufficient for readers who meet the prerequisites described above.

This book focuses on visual signing in face-to-face and camera-mediated contexts. Tactile signing and other adapted modalities involve different spatial constraints and are beyond this edition's scope.

A Note on Variation and Claims

ASL varies by region, generation, educational background, racial and ethnic community, and individual style. When this book states that signers "often" do something or "may" employ a particular strategy, it describes common patterns observed across many signers, not mandatory rules that apply universally.

The spatial patterns discussed here, including temporal mapping, hierarchical positioning, and register-linked proximal involvement, are tendencies supported by linguistic research and common practice in many communities, though frequency and preferred strategies vary. They are not mechanical formulas that native signers consciously follow. A Deaf signer from a Black ASL background may use larger signing space than one from a white mainstreamed background; both are producing valid, native ASL. A signer from the South may employ different spatial conventions than one from the Northeast. An older signer who attended a residential school may sign with more proximal involvement than a younger signer educated in mainstream settings.

This variation is not noise to be filtered out but data to be understood. Where the book describes a "typical" or "common" pattern, understand that you will encounter signers who diverge from that pattern, and their divergence reflects legitimate variation rather than error.

The book's notation system for arm positioning (described in Appendix A) is specific to this text. These symbols are pedagogical tools designed to help you attend to arm configuration. They are not standard linguistic transcription conventions, and you should not expect to see them in academic ASL linguistics publications or other teaching materials.

The Structure of This Book

The book proceeds in three movements.

Chapters One through Four establish foundations. Chapter One introduces the anatomical architecture of the signing arm and the concept of signing space. Chapters Two, Three, and Four examine the three spatial dimensions, near/far, up/down, and left/right, and the grammatical and discourse functions each dimension serves.

Chapters Five through Nine examine specific applications. Chapter Five addresses proximal articulation and register. Chapter Six treats classifier predicates. Chapter Seven examines two-handed coordination. Chapter Eight focuses on the elbow as pivot point. Chapter Nine integrates arm positioning with non-manual markers.

Chapters Ten through Twelve address practical and contextual matters. Chapter Ten covers biomechanics and signing health. Chapter Eleven discusses acquisition and pedagogy. Chapter Twelve examines variation, change, and the future of signing conventions.

Supplementary materials include a glossary of terms, a notation guide, practical exercises organized by chapter, self-assessment checklists, and recommendations for further study.

Each chapter can be read independently, but the book's argument builds cumulatively. Readers seeking comprehensive understanding should proceed in order.

How to Use This Book

Read actively. When the text describes an arm configuration, produce it. When an exercise asks you to practice a contrast, actually practice it, preferably with video recording for self-review. The concepts here are embodied; they cannot be fully understood through reading alone.

Seek feedback. The self-assessment checklists provide structure, but feedback from fluent signers remains invaluable. If you have access to Deaf community members, interpreting mentors, or ASL instructors, invite their observations on your arm positioning specifically.

Expect discomfort. Attending consciously to arm movement may initially make your signing worse, not better. You may feel self-conscious, mechanical, or awkward. This is normal. Conscious competence precedes unconscious competence. The goal is to move through deliberate attention to integrated fluency, and that transition takes time.

Return to this book. The concepts here reward revisiting. What seems abstract on first reading may become concrete after months of practice. What seems obvious after a year of experience may reveal new depth when re-examined.

Acknowledgments

This book draws on decades of linguistic research into ASL structure, including the foundational work of William Stokoe, Robbin Battison, Scott Liddell, Diane Brentari, Karen Emmorey, and many others. It draws equally on the lived expertise of the Deaf community, whose language this is and whose insights no hearing researcher can replicate.

The specific focus on arm angles as a pedagogical concern emerged from observing the gap between what ASL curricula typically teach (vocabulary, grammar, discourse) and what distinguishes intermediate from advanced signers (physical fluency, spatial precision, register control). This book attempts to bridge that gap.

Errors and limitations remain the authors' responsibility.

A Framework, Not an Authority

This book offers a pedagogical framework, not a definitive prescription for "correct" ASL. When community norms differ from descriptions here, treat community usage as primary. Use this framework to analyze and understand what you observe rather than to label divergent patterns as wrong. The goal is developing signing that falls within the native range, not imitating any single style or matching any textbook description exactly.

Deaf community members are the ultimate authorities on their language. Feedback from Deaf interlocutors and Deaf instructors should override any claim in this book. Interpreting mentors can additionally provide valuable register-specific and professional-context guidance. If a Deaf person tells you something about your signing, attend to that feedback even if it seems to contradict what you have read here.

Sources and Methodology

The generalizations in this book draw on published ASL linguistics, interpreter pedagogy literature, and repeated observations across multiple signing communities. They are not presented as corpus-frequency claims or as statistically validated findings. Where research supports a claim, that research reflects particular communities and contexts; other communities may pattern differently.

The practical advice reflects accumulated wisdom from interpreter training programs and Deaf education, filtered through the specific lens of arm positioning. Readers seeking rigorous empirical data on any particular claim should consult the primary literature cited in the Further Resources appendix.

CHAPTER ONE

The Signing Envelope and Its Anatomical Architecture

American Sign Language exists in space. Unlike spoken languages, which unfold through time as acoustic sequences, signed languages occupy three-dimensional volume, using the body as both instrument and reference point. The signer's arms, hands, and fingers move through this space, creating meaning through configuration, location, movement, and orientation. To understand how ASL works at an advanced level, one must understand the physical architecture that makes signing possible: the bones, joints, and muscles that produce signs, and the spatial conventions that organize where signs occur.

In this book, "arm angles" refers primarily to elbow flexion and extension angle, shoulder flexion and abduction as they determine hand distance and height, and forearm pronation and supination when relevant to orientation. These angles, taken together, position the hand in signing space and contribute to register, emphasis, and meaning in ways that handshape alone cannot account for.

This chapter establishes the foundational framework for everything that follows. We begin with anatomy, proceed to the concept of signing space, and conclude with the notational conventions that will be used throughout this text.

The Skeletal Framework of the Signing Arm

The arm, considered as a signing instrument, comprises a chain of segments connected by joints, each permitting specific types of movement. Understanding this chain clarifies why certain sign movements are possible and others are not, why some positions are sustainable and others fatiguing, and why the angle of the elbow or the rotation of the shoulder affects the meaning of a sign.

The shoulder girdle provides the foundation. The clavicle (collarbone) extends from the sternum to the acromion process of the scapula (shoulder blade), and the scapula itself floats against the ribcage, held in place by muscles rather than direct skeletal attachment. This floating arrangement permits remarkable mobility: the shoulder girdle can elevate, depress, protract (move forward), retract (move backward), and rotate. The glenohumeral joint, where the head of the humerus (upper arm bone) meets the glenoid fossa of the scapula, is a ball-and-socket joint permitting movement in virtually any direction. This joint allows the arm to flex (raise forward), extend (move backward), abduct (raise to the side), adduct (lower toward the body), and rotate both internally and externally.

The combined mobility of the shoulder girdle and glenohumeral joint creates what kinesiologists call the shoulder complex, and this complex provides ASL with its largest arm movements. When a signer reaches forward to place a sign in future time space, or raises the arm overhead for ceremonial or emphatic signing, or extends laterally to establish a distant spatial referent, the shoulder complex is doing much of the primary work, often in coordination with torso lean and trunk rotation. Signs that originate from shoulder movement carry different qualities than signs articulated only at the wrist: they can be perceived as larger and, in many contexts, as more emphatic, more formally projected, or more effortful.

The humerus, the single bone of the upper arm, connects the shoulder complex to the elbow. The elbow joint is primarily a hinge, permitting flexion (bending the arm, bringing the forearm toward the upper arm) and extension (straightening the arm). The elbow's range of motion typically spans from full extension (zero degrees, a straight arm) to approximately one hundred fifty degrees of flexion (the forearm approaching the upper arm). Unlike the shoulder's multidirectional freedom, the elbow operates essentially in one plane, but this plane can be oriented in any direction depending on shoulder positioning. The elbow thus serves as a relay point, converting the shoulder's orientation into the forearm's position.

The forearm contains two bones: the radius (on the thumb side) and the ulna (on the pinky side). These bones can rotate around each other, producing pronation (turning the palm downward or backward) and supination (turning the palm upward or forward). This rotation occurs through the radioulnar joints at both the elbow and the wrist. Pronation and supination are critical for palm orientation in ASL, one of the fundamental parameters distinguishing signs.

The wrist permits flexion (bending the hand toward the palm side), extension (bending the hand toward the back of the hand), radial deviation (bending toward the thumb side), and ulnar deviation (bending toward the pinky side). The wrist's mobility allows fine adjustments to hand orientation and permits small, rapid movements that would be inefficient to produce from more proximal joints. Many signs are articulated primarily from the wrist, with the shoulder and elbow serving mainly to position the wrist in the appropriate location.

The hand and fingers constitute the most distal segment of the signing arm. The hand contains twenty-seven bones: eight carpals in the wrist region, five metacarpals in the palm, and fourteen phalanges in the fingers. The complexity of the hand permits the dozens of distinct handshapes used in ASL. While hand configuration is beyond the primary scope of this text, the hand cannot be entirely separated from arm positioning: where the hand is located, how it is oriented, and how it moves all depend on the proximal joints that position it.

Degrees of Freedom and Articulatory Possibilities

Each joint in the arm chain contributes degrees of freedom: independent directions of possible movement. The shoulder complex contributes multiple degrees (flexion/extension, abduction/adduction, internal/external rotation, plus scapular movements). The elbow contributes essentially one degree (flexion/extension). The radioulnar joint contributes one degree (pronation/supination). The wrist contributes two degrees (flexion/extension and radial/ulnar deviation). The fingers contribute further degrees at each knuckle.

These degrees of freedom compound through the chain. A movement originating at the shoulder propagates through the elbow, forearm, wrist, and fingers, positioning each successive segment. This means that the shoulder's position constrains what positions are available to the elbow, which constrains the forearm's orientation, which constrains the wrist's location, which constrains where the hand can be.

For ASL specifically, this chained structure means that no single arm angle is an isolated parameter. The angle of the elbow affects hand location. The rotation of the shoulder affects palm orientation. The position of the entire arm in space determines whether a sign is produced in neutral position, elevated position, forward position, or lateral position. Advanced signers develop intuitive mastery of this chain, positioning proximal joints to make distal articulations fluid and effortless. Intermediate signers often struggle because they have not yet learned to prepare proximal positioning before attempting distal articulations.

Proprioception and the Signing Body

Beyond the mechanics of joints and muscles lies proprioception: the body's sense of its own position in space without visual confirmation. When you close your eyes and touch your nose, proprioception guides your finger. When you sign while looking at your interlocutor's face rather than at your own hands, proprioception tells you where your arms are.

Intermediate signers often rely heavily on visual monitoring of their own hands, glancing down to check hand position or watching their signing in peripheral vision. This visual dependency slows production and disrupts eye contact. Advanced signers trust their proprioceptive sense, knowing where their arms are without looking.

Developing proprioceptive trust requires practice. The exercises in this book include proprioceptive challenges: producing signs without visual monitoring, estimating arm angles with eyes closed, and attending to the felt sense of different configurations. This kinesthetic awareness is foundational to the spatial precision that characterizes fluent signing.

The Signing Space: Mapping Meaning onto Volume

The signing space is the three-dimensional volume in front of and around the signer within which signs are conventionally produced. This space is not arbitrary but structured by both physical constraints and linguistic convention. Understanding signing space is essential because spatial positioning can carry grammatical and discourse meaning: signs produced in different locations may convey different information even when their handshape and movement are identical.

The neutral signing space occupies a roughly rectangular volume centered in front of the signer's torso. Its approximate boundaries in conversational signing are: the waist at the bottom, the forehead or upper face at the top, shoulder width laterally (perhaps slightly narrower), and roughly a forearm's comfortable reach forward from the body. Expansion toward the crown of the head or overhead occurs in formal, emphatic, or depictive contexts. These boundaries shift with body size, seating versus standing, signing distance, and camera framing; they are functional guidelines rather than fixed dimensions. Signs produced within this neutral space are unmarked for spatial meaning; their location does not add discourse-level significance beyond the sign's lexical specification.

ASL uses three spatial dimensions for different functions:

The left-right dimension provides the primary field for spatial reference. When a signer establishes that one referent is "here" and another is "there," the left-right dimension typically carries that distinction. This dimension handles much of the referential work in ASL, allowing signers to track multiple referents without constantly repeating their names.

The up-down dimension can encode physical height, hierarchical relationships, emphasis, and register variation. When comparing a boss and an employee, the boss might be established in higher space. When producing emphatic signing, the signing space may expand vertically. This dimension is simultaneously iconic (higher space for physically higher things) and metaphorical (higher space for more important or powerful things).

The near-far dimension (toward and away from the body) is often associated with temporal reference. Many signers use a conventional mapping where space in front of the body represents the future and space toward or behind the body represents the past. In practice, many past references are expressed by movement toward the body or over-shoulder orientation rather than sustained placement truly behind the signer. This mapping is well-supported by lexical evidence (the signs FUTURE, TOMORROW, PAST, YESTERDAY all involve movement along this axis) but is a discourse resource rather than an obligatory grammatical marker.

A caution for learners: do not treat forward placement as a substitute for lexical time adverbs. Use space to organize time, not to encode tense. Lexical markers (YESTERDAY, WILL, FINISH, etc.) do the primary temporal work; spatial positioning provides optional organization and emphasis.

These three dimensions intersect in the signer's body, which serves as the origin point for the spatial coordinate system. The signer is always at the center of their signing space, and all spatial references are made relative to this embodied origin.

Lexical Location versus Discourse-Modified Placement

A crucial distinction for understanding spatial meaning is the difference between lexical location and discourse-modified placement.

Many signs have lexically specified locations: they are produced at particular places in signing space as part of their phonological form. THINK is produced at the forehead. FEEL is produced at the chest. KNOW is produced near the temple. These locations are not "marked" in any discourse sense; they are simply where those signs are made. Producing THINK at the forehead does not indicate emphasis, hierarchy, or any other discourse meaning, because the forehead is where THINK lives lexically.

Discourse-modified placement, by contrast, involves producing a sign at a location other than its lexical specification, or using location productively to convey meaning beyond the sign itself. Establishing a referent at a particular location, then pointing back to that location, involves discourse-level spatial reference. Producing a sign higher or lower than its citation form for emphasis involves discourse modification. These are the spatial meanings this book primarily addresses.

The distinction matters because it is easy to over-interpret spatial positioning. Not every sign produced above neutral space is "elevated for emphasis." Not every sign produced forward is "future-oriented." Many signs are simply produced where they are lexically specified. Learning to distinguish lexical location from discourse modification is part of developing sophisticated spatial awareness.

Proximal versus Distal Articulation

A crucial distinction for understanding arm involvement in ASL is the difference between proximal articulation and distal articulation. Proximal articulation refers to sign production originating from joints close to the body's center: the shoulder complex primarily, but also including movements that engage the elbow significantly. Distal articulation refers to sign production originating from joints further from the body's center: the wrist and fingers primarily, with the shoulder and elbow serving mainly to hold position.

This distinction is scalar, not categorical. Signs exist on a continuum from maximally proximal (large arm movements engaging the shoulder) to maximally distal (small finger movements with the arm nearly still). Most signs fall somewhere between these extremes.

The proximal/distal distinction often correlates with register, emphasis, and visibility needs, though this correlation is a tendency rather than a rule. Signs produced with more proximal involvement may read as more emphatic, more formal, or more public. Signs produced with more distal involvement may read as more casual, more rapid, or more intimate. Chapter Five examines this correlation in detail.

The Neutral Position and Departure from Neutral

Signing involves movement from position to position. Between signs, the arms pass through transitional configurations, and the character of these transitions affects the fluency and readability of signing.

The neutral position for the signing arm involves the upper arm hanging naturally from the shoulder with minimal muscular engagement, the elbow flexed to approximately ninety degrees (so the forearm is roughly horizontal), and the wrist in a relaxed position. The forearm typically rests in a semi-pronated state, with palms facing each other or angled slightly downward, rather than the anatomical neutral (thumbs-up, as in a handshake). This signing-neutral position means that moving to a palm-up orientation requires more forearm rotation than moving to a palm-down orientation. From this configuration, the hand is located in the center of the neutral signing space at approximately chest height, ready to move in any direction.

Signs depart from this neutral position and typically return toward it when complete. Large departures (reaching high, reaching far forward, extending laterally) require more muscular effort than small departures and are therefore reserved for occasions when the spatial positioning serves a purpose.

In fluent signing, transitions between signs are smoothed by anticipatory positioning. A signer producing a sequence of signs will begin moving toward the next sign's location before the current sign is complete. This coarticulation means that arm angles during transitions are influenced by both the preceding and following signs. Intermediate signers often produce signs in isolation, with full returns to neutral between signs, resulting in choppy or robotic-looking signing. Advanced signers blend signs together, with arm angles at any given moment reflecting the surrounding context.

Common Learner Errors: The "T-Rex" and Over-Return

Two arm positioning errors are particularly common among intermediate signers.

The first is what instructors sometimes call "T-Rex arms" or "pinned elbows": signing with the elbows held close to the ribs, restricting movement to the forearms and hands. This configuration looks tense and constrained. It often reflects self-consciousness about taking up space or uncertainty about appropriate signing space size. The remedy is deliberate practice in "unpinning" the elbows, allowing the upper arms to move freely from the shoulders.

The second common error is over-returning to neutral. After each sign, the signer brings the arms fully back to rest position before beginning the next sign. This creates choppy, segmented signing that lacks flow. The remedy is practicing connected discourse with attention to coarticulation, allowing the arms to move continuously from sign to sign without full returns to neutral.

Both errors restrict the signing space and reduce the arm's expressive range. Both are addressed through exercises in this book.

Notation Conventions for This Text

To discuss arm angles precisely, this text employs glossing conventions standard in ASL linguistics, supplemented with additional notation for arm positioning.

Signs are represented by their English gloss in capital letters: UNDERSTAND, MOTHER, GIVE, BOOK. Glosses are labels, not translations. Fingerspelling is indicated by hyphens between letters: J-O-H-N. Lexicalized fingerspelled signs are marked with a pound sign: #JOB.

Spatial indexing uses bracketed locus labels: JOHN[a], MARY[b], IX[a] (index toward location a). Indicating verbs show movement between locations: GIVE[1>a] (first person gives to location a), TELL[a>b] (referent at a tells referent at b).

For arm positioning specifically, this text employs bracketed descriptors:

Proximal involvement: POINT[PROX+] indicates pointing with notable shoulder engagement. GIVE[PROX++] indicates giving with strong proximal involvement.

Height modification: UNDERSTAND[HIGH] indicates the sign produced above its lexical location. WALK[LOW] indicates the sign produced below neutral.

Near-far positioning: PLAN[FORWARD+] indicates production with forward extension. REMEMBER[TOWARD-BODY] indicates retraction toward the body.

Movement quality: WALK[SLOW] indicates movement produced slowly. THROW[FORCEFUL] indicates forceful arm movement.

These notations are specific to this book and are designed for pedagogical clarity. They are not standard linguistic transcription conventions. Appendix A provides a complete notation guide.

A Sample Annotated Transcript

To illustrate how these conventions work together, consider a brief annotated passage. Suppose a signer establishes two referents, topicalizes an object, and describes an interaction with varying arm involvement:

```
___t
BOOK   JOHN[a]  MARY[b]  GIVE[a>b, PROX+]
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In this passage, BOOK is topicalized (the topic marker ___t spreads over BOOK only). JOHN is established at locus [a], MARY at locus [b]. GIVE moves from [a] toward [b] with notable proximal involvement [PROX+], indicating John gave to Mary.

A second example demonstrating height and forward extension:

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NEXT-YEAR[FORWARD+]  GOAL[HIGH]  FINISH[PROX+]
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Here, NEXT-YEAR is produced with forward extension [FORWARD+], placing future time emphatically forward. GOAL is elevated [HIGH] for emphasis or to mark importance. FINISH uses proximal involvement [PROX+] for emphatic completion.

These examples demonstrate spatial reference, indicating verb trajectory, proximal involvement, height modification, forward extension, and non-manual scope. Readers will encounter these conventions throughout the text.

Note for layout: Code blocks containing NMM scope lines must be rendered in a monospaced font to preserve alignment.

Conclusion

This chapter has established the anatomical and spatial foundations for the study of arm angles in ASL. The signing arm is a chain of segments connected by joints, each contributing degrees of freedom to overall expressive capacity. The signing space is a three-dimensional volume with meaningful dimensions: left-right for spatial reference, up-down for hierarchy and emphasis, near-far for temporal and other discourse functions.

Signs may be articulated more proximally (from the shoulder and elbow) or more distally (from the wrist and fingers), and this difference can carry meaning. The neutral position serves as a baseline from which signs depart and toward which they return, and anticipatory coarticulation smooths the transitions between signs. Lexical location must be distinguished from discourse-modified placement to avoid over-interpreting spatial positioning.

With these foundations in place, we proceed in Chapter Two to examine how the near-far dimension functions in discourse, particularly its common use for temporal reference.

CHAPTER TWO

The Near-Far Dimension and Temporal Reference

ASL does not mark tense through obligatory verb conjugation the way English does. You cannot look at an ASL verb in isolation and determine whether it refers to past, present, or future events. Instead, temporal reference is typically established through lexical time markers (YESTERDAY, TOMORROW, LAST-WEEK, FINISH, NOT-YET) and maintained through discourse continuity. Once a time frame is established, subsequent signs are understood within that frame until it is explicitly changed.

Beyond this lexical and discourse-level system, many signers employ a spatial strategy for organizing temporal information: mapping time onto the near-far dimension of signing space. This chapter examines that spatial strategy, its scope and limits, and how arm extension and retraction along this dimension can contribute to temporal meaning.

Time Signs and the Near-Far Axis

The lexical evidence includes many common time signs that involve forward or backward movement or orientation. Consider the forms of these signs:

FUTURE typically involves an open palm held near the cheek, then moved forward in an arc. The forward movement is semantically transparent: the sign moves toward the future zone.

TOMORROW involves forward movement from the chin area, placing the next day in forward space.

LATER, SOON, and NEXT-WEEK all involve forward displacement of varying degrees.

PAST typically involves backward movement, often the hand moving backward over the shoulder in a wave-like motion.

YESTERDAY involves the thumb touching the cheek and then moving backward toward the ear or over the shoulder.

BEFORE, AGO, and LAST-YEAR all incorporate backward displacement.

These lexical patterns establish a conventional association: forward with future, backward with past, the body with the present moment. This association is not arbitrary; it reflects widespread

conceptual metaphors linking forward motion with future time, found across many languages and cultures. But in ASL, the metaphor is embodied in sign forms and can be productively extended in discourse.

Spatial Timelines: A Discourse Resource

Beyond individual time signs, signers can establish explicit timelines that organize extended discourse. In timeline constructions, the signer creates a spatial scaffold on which events can be placed.

One common technique involves the non-dominant arm. The signer extends the non-dominant arm horizontally in front of the body, creating a physical timeline. Points along this arm represent different times: the portion near the shoulder represents the past, the mid-forearm represents the present, and the hand or fingertips represent the future. The dominant hand then places events at various points along this timeline, indicating when those events occur relative to each other.

This timeline establishment requires deliberate arm positioning. The non-dominant arm must be held in a stable extended position, involving sustained shoulder flexion, sustained elbow extension, and muscular effort to maintain the position. The dominant arm must reach to various points along the timeline.

However, timeline constructions are optional discourse tools, not obligatory grammatical structures. Many signers use them rarely. Others use them frequently, particularly in narrative, explanation, and planning contexts. Some signers prefer lateral timelines (left-to-right) rather than sagittal timelines (back-to-front), especially when creating diagram-like explanations or when the lateral arrangement better serves the discourse structure.

The physical demands of explicit timeline construction explain why it is not used constantly. Holding an extended timeline arm is fatiguing. Signers employ this technique selectively for discourse that benefits from explicit temporal scaffolding: complex narratives with multiple time-shifted events, explanations of historical sequences, or planning discussions involving multiple future milestones.

Gradient Temporal Distance

When signers do use the near-far dimension for temporal reference, the degree of forward or backward extension can correlate with temporal distance, though this correlation is gradient and context-dependent rather than precisely calibrated.

A small forward movement, with the elbow remaining mostly flexed, might indicate the near future. A larger forward movement, with the elbow extending significantly, might indicate a more distant future. Full arm extension, reaching as far forward as comfortable, might indicate remote future or emphatic futurity.

Similarly, references to the recent past might involve minimal backward displacement, while references to the distant past might involve more extensive backward movement or orientation.

This is not a mechanical system where specific arm angles map to specific time spans. Rather, it is a gradient resource that signers can deploy with more or less intensity depending on discourse needs. The relationship between extension and temporal distance is iconic (more extension = more distance) but approximate.

Backward Reference: Physical and Conceptual Constraints

The near-far dimension is asymmetrical. The arm's reach forward is greater and more comfortable than its reach backward. The shoulder's range of flexion (moving the arm forward) exceeds its range of extension (moving the arm backward). You cannot extend your elbow behind your back without contortion.

This physical asymmetry corresponds to a tendency in how some signers use space for temporal reference. Forward placement for future reference is often easier to deploy and therefore often used more in productive spatial organization, though many signers rely primarily on lexical time markers for both past and future rather than using spatial placement productively for either. Signers who do use spatial temporal reference more commonly establish past reference through lexical time markers and then produce content in neutral space, rather than consistently placing past-referent signs in backward space.

When backward reference does occur, it often involves backward movement of the hand (over the shoulder or behind the head) rather than large backward arm extensions. The body might shift slightly forward, so that relative to the shifted body, neutral space is now behind where the body began. Eye gaze might orient backward. These strategies accommodate the physical constraints while maintaining the conventional association.

In this book's notation (see Appendix A), many "past" realizations are better captured as [TOWARD-BODY] rather than [BEHIND], because truly behind-the-body placement is relatively constrained. The distinction matters: [TOWARD-BODY] indicates retraction toward the signer's body, while [BEHIND] indicates placement in the space behind the signer's coronal plane.

Interaction with Lexical Time Markers

Spatial temporal reference interacts with, rather than replaces, lexical time markers. In typical ASL discourse, time is established lexically and then maintained through discourse continuity. A signer might begin a narrative with YESTERDAY, produce a sequence of events in neutral or slightly backward-oriented space, and rely on the established frame to maintain past reference without marking each clause spatially.

Spatial placement adds value when: - Contrasting different time frames within a single discourse (discussing what happened, what is happening, and what will happen) - Organizing complex temporal sequences with multiple events - Emphasizing temporal relationships between events - Aligning spatial reference with constructed action (when enacting a character thinking about their own past or future)

The spatial system supplements the lexical system; it does not supplant it. Learners who attempt to replace lexical time markers with purely spatial encoding often produce non-native-looking ASL. The most fluent approach integrates both systems.

Aspectual Modification and Arm Involvement

Aspect, which concerns the internal temporal structure of events (duration, completion, repetition, habituality), interacts with arm positioning differently than tense does.

Aspectual modification in ASL often involves changes to movement quality: circular or repeated movement for continuous aspect, single definite movement for punctual aspect, characteristic rhythmic repetition for habitual aspect. Arm involvement affects how these modifications are realized.

Continuous or durative aspect, indicating an ongoing or extended event, is often marked by repeated or elongated movement. When this modification is produced, arm involvement affects perceived intensity and duration. Small, wrist-originated repetitions may indicate moderate continuation; larger, elbow-engaged repetitions may indicate extended or emphatic continuation.

Habitual aspect, indicating regular or customary occurrence, involves characteristic repeated movement with particular rhythm. Arm involvement affects perceived frequency. Tight, quick repetitions might suggest frequent occurrence; slower, more expansive repetitions might suggest less frequent but established habituality.

These aspectual meanings are conveyed through movement quality rather than spatial positioning per se, but arm engagement shapes how that movement quality is produced and perceived.

Conditional and Hypothetical Space

Conditional and hypothetical constructions pose interesting challenges because they involve events that may or may not occur. In ASL, conditional content is typically marked by raised eyebrows over the condition clause, often with forward head lean and body shift.

The forward space can serve double duty in conditionals: it is both the hypothetical zone (where non-actual scenarios are entertained) and the future zone (where potential outcomes reside). A condition about future possibility naturally maps onto forward space, with arm extension placing the hypothetical content in that zone.

Counterfactual conditionals about the past (what would have happened if something had been different) may involve more complex spatial manipulation, potentially placing the counterfactual scenario in a different location than actual past events, or relying primarily on non-manual markers and lexical indicators rather than spatial placement.

Practical Implications

For advanced learners, understanding the near-far dimension's role in temporal reference has several implications.

First, recognize that spatial temporal mapping is optional. Many fluent signers establish time lexically and maintain it through discourse without elaborate spatial placement. Do not feel obligated to reach forward for every future reference or backward for every past reference.

Second, when you do use spatial temporal reference, let arm extension be gradient and context-appropriate. Small extensions for near time, larger extensions for distant time, and choose your degree of extension based on discourse emphasis rather than trying to calibrate precisely.

Third, observe how native signers in your community use (or do not use) spatial timelines. There is genuine variation, and what you see modeled will shape your own production.

Fourth, integrate spatial and lexical systems. The most natural-looking ASL establishes time clearly, uses space strategically for organization and emphasis, and does not rely on either system exclusively.

Conclusion

The near-far dimension of signing space is conventionally associated with temporal reference in ASL, supported by the forms of many time-related signs and by the productive use of spatial timelines in discourse. This mapping is a resource that signers can deploy, not an obligatory grammatical system. Forward extension correlates gradiently with future reference; backward positioning correlates with past reference, though with more constraints.

Arm extension and retraction along this dimension, governed by elbow angle and shoulder positioning, can contribute to temporal meaning when signers choose to use this spatial strategy. But temporal reference in ASL is primarily established through lexical time markers and discourse structure, with spatial mapping serving as a supplementary organizational tool.

The next chapter examines the up-down dimension and its functions in encoding hierarchy, emphasis, and register.

CHAPTER THREE

The Up-Down Dimension: Height, Hierarchy, and Register

The vertical dimension of signing space, from below the waist to above the head, serves multiple functions in ASL. Height can represent physical reality (tall things, high places), metaphorical relationships (status, power, importance), emphatic intensification, and register variation. This chapter examines these functions and their interaction, with particular attention to distinguishing lexical height from discourse-modified height.

Lexical Height: Where Signs Live

Many signs have lexically specified heights: they are produced at particular vertical locations as part of their phonological form. THINK is produced at the forehead. FEEL is produced at the chest. WANT is produced at the torso. WALK typically involves movement at or below waist level.

These lexical locations are not meaningful in the discourse sense. Producing THINK at the forehead does not indicate that the thought is important, elevated, or formal. It simply indicates that the sign is THINK, because that is where THINK is made. The forehead location is part of the sign's phonological specification, like its handshape or movement.

Understanding this distinction is crucial for interpreting height in ASL. When you see a sign produced at elevated height, ask: Is this the sign's lexical location, or has the signer modified the sign's typical height for discourse purposes?

Signs produced at their lexical heights, regardless of where those heights fall within the signing space, are unmarked for the discourse meanings this chapter discusses. The discourse meanings emerge only when height is modified from lexical specification or when height is used productively in spatial reference.

Physical and Iconic Height

The most transparent use of vertical space is iconic: higher positions in signing space represent higher positions in the world being described.

When describing a tall building, a signer might reach upward to indicate its height. When contrasting items on different shelves, higher shelf is represented in higher space. When depicting a

bird flying overhead versus a snake on the ground, the vertical positions of the classifier handshapes correspond to the physical positions of the animals.

In classifier predicates, this iconic use of height is routine and productive. A vehicle classifier placed in high space is understood as being in an elevated location (on a bridge, on a hill). The same classifier in low space is understood as being at ground level or below. Movement from high to low depicts falling or descending; movement from low to high depicts rising or climbing.

This iconic use requires arm adjustment. To place a classifier in high space, the shoulder must flex, possibly with some elevation, and the elbow may extend to reach the elevated position. To place a classifier in low space, the arm lowers, potentially with shoulder depression and trunk flexion. The arm's vertical positioning directly determines where the represented entity appears in the depicted scene.

Metaphorical Height: Status and Hierarchy

Beyond physical representation, vertical space can encode metaphorical relationships. Many conceptual metaphors link height with status, power, importance, or positivity:

- High status individuals are "above" lower status individuals
- Important matters are "elevated" concerns
- Positive outcomes are "up" while negative outcomes are "down"
- The divine or transcendent is associated with "the heavens"

ASL signers can exploit these metaphorical associations by establishing referents at different heights based on their relative status, importance, or evaluation. A CEO might be established in high space while employees are established in lower space. A preferred option might be presented in higher space than a rejected alternative. Religious or ceremonial signing often employs the highest reaches of signing space.

However, these metaphorical uses are tendencies, not rules. Not every signer uses height metaphorically in every context. The association between height and positive evaluation is not reliable enough to serve as a general interpretive principle. Context, co-occurring non-manual markers, and discourse structure all affect whether height carries metaphorical meaning in a given instance.

When height is used metaphorically, the arm must adjust to place signs or referents at appropriate levels. Establishing a high-status referent requires shoulder flexion and possibly elbow extension to reach elevated space. Subsequent references to that location must return to approximately the same height, requiring consistent arm positioning throughout the discourse.

Emphatic Elevation

Vertical positioning can function as an intensifier. A sign produced with elevated positioning, above its lexical specification or above typical production, may be interpreted as emphatic, intensified, or particularly important.

Consider a sign lexically produced at chest height. The same sign produced at shoulder height, with the arm raised beyond its typical position, may convey "very X" or "emphatically X." The elevation itself signals that this instance of the sign is marked, significant, or intensified.

This emphatic function is gradient. Small elevations produce small emphatic effects; large elevations produce larger effects. The arm's vertical positioning can be adjusted continuously, producing a continuum of intensity rather than discrete levels.

The connection between elevation and emphasis may derive from the physical effort required. Raising the arm against gravity requires muscular work. Greater elevation requires greater work. This effort is visible to viewers and can be interpreted as investment, emphasis, or intensity. The physical and the semantic connect: more effort signals more meaning.

However, emphatic elevation is one tool among many for expressing emphasis in ASL. Increased movement size, altered movement quality, facial intensifiers, and other strategies also convey emphasis. Height modification is not required for emphasis, and elevation does not automatically indicate emphasis outside of appropriate contexts.

Register and Vertical Range

Signing register interacts with vertical positioning in several ways.

In formal register (public presentations, professional interpreting for large audiences, ceremonial contexts), the signing space often expands in all dimensions, including vertically. Signs are produced with larger excursion, and the vertical range extends both higher and lower than in casual conversation. This expansion requires more arm involvement: the shoulder and elbow engage more actively, reaching positions that would be unusual in intimate conversation.

In casual register (familiar conversation, informal settings), the signing space contracts. The vertical range compresses toward the neutral band. Signs lexically specified for elevated or depressed positions might be produced closer to neutral height. Emphatic elevation is used sparingly.

This register-linked variation in vertical range is a tendency observed across many signers, but individual and community variation exists. The key principle is that formal contexts tend toward

expanded space (including vertical expansion) while casual contexts tend toward compressed space (including vertical compression).

Religious and ceremonial signing occupies a special register that often employs the highest regions of signing space. Signs referring to God, heaven, or spiritual matters may be produced at or directed toward the maximum reachable height. This positioning requires full arm elevation: the shoulder must flex fully, potentially with scapular elevation, while the elbow extends to reach overhead. This is physically demanding, and the muscular effort involved may contribute to the perceived solemnity or significance of the content.

Sustained overhead signing is fatiguing. Signers in religious or ceremonial contexts must manage this physical demand through pacing, alternating arms, or accepting that tremor may develop. The difficulty of sustained elevated signing is itself meaningful: it signals extraordinary effort and investment.

Distinguishing Height Functions

In practice, height serves multiple functions simultaneously, and distinguishing among them requires attention to context.

A sign produced at elevated height might be: - At its lexical location (THINK at the forehead) - Iconically representing physical height (a tall building) - Metaphorically representing status (a CEO) - Emphatically intensified (very important) - Part of formal register expansion (platform signing)

A sign produced at depressed height might be: - At its lexical location (WALK at low level) - Iconically representing physical lowness (ground level) - Metaphorically representing subordinate status (an employee) - Part of casual register compression (intimate conversation)

Context, co-occurring markers, and discourse structure disambiguate these functions. A sign at elevated height during a formal presentation is more likely register expansion than emphatic modification of that particular sign. A referent established in high space during a narrative about corporate structure is more likely metaphorical hierarchy than emphatic marking.

Advanced signers learn to read these contextual cues fluently. Intermediate signers sometimes over-interpret height, assuming discourse meaning where only lexical location is present, or assuming emphasis where register variation is the relevant factor.

Practical Applications

For developing vertical awareness, consider the following:

First, distinguish lexical locations from modified locations. Know where signs are typically produced, so you can recognize when a signer has moved them for discourse purposes.

Second, use iconic height appropriately in classifier predicates. When depicting scenes, let vertical positioning in signing space correspond to vertical positioning in the depicted world. This requires adjusting arm position to place classifiers at appropriate heights.

Third, be cautious with metaphorical height. The association between height and status/importance/positivity is real but not automatic. Use it deliberately when establishing hierarchical relationships, but do not assume that every high-placed sign carries metaphorical meaning.

Fourth, let register shape your vertical range. In formal contexts, allow your signing space to expand, reaching higher and lower positions. In casual contexts, allow compression toward neutral.

Fifth, use emphatic elevation as one tool among many. When you want to intensify a sign, elevation is available, but so are other strategies. Do not over-rely on height modification.

Conclusion

The up-down dimension of signing space serves multiple functions: iconic representation of physical height, metaphorical representation of status and hierarchy, emphatic intensification, and register-linked expansion or compression. These functions interact and overlap, requiring contextual interpretation.

Arm positioning realizes these vertical meanings. Shoulder flexion and elevation, combined with elbow extension, produce elevated signing positions. Shoulder depression and arm lowering produce depressed positions. The physical effort of elevated signing contributes to its perceived significance in formal and emphatic contexts.

The next chapter examines the left-right dimension and its central role in spatial reference and verb agreement.

CHAPTER FOUR

The Left-Right Dimension and Spatial Reference

The left-right dimension of signing space provides the primary field for spatial reference in ASL. When a signer establishes a location for a referent, subsequent reference to that location, through pointing, verb agreement, or classifier placement, tracks that referent through the discourse. This spatial grammar is one of the most distinctive features of signed languages.

This chapter examines how arm mechanics realize spatial reference. The arm must extend to establish locations, maintain consistent angles for subsequent reference, and adjust dynamically when directing verbs or moving classifiers between referents.

The Mechanics of Indexing

Indexing is the act of pointing to establish or reference a location in signing space. The basic index (IX) involves extending the index finger and pointing toward a location. But indexing is more than a handshape; it is a full arm movement that determines where the location is established.

When establishing a referent's location, the arm positions the pointing hand at a particular point in signing space. The signer might establish JOHN on the left by pointing with the arm extended toward the left side of signing space. This requires shoulder rotation and possibly flexion to bring the arm across the body, elbow extension to reach the target, and wrist orientation to direct the index finger toward the intended point.

The precision of arm extension affects the precision of reference. A casual index, with minimal arm extension and a vague pointing direction, establishes a loosely defined location suitable for temporary reference. A deliberate index, with fuller arm extension, held position, and clear pointing direction, establishes a more precisely defined location suitable for extended discourse reference.

Once established, the location must be consistently referenced. If JOHN was established on the left with the arm extended at a particular angle, subsequent references to JOHN should employ approximately the same angle. This consistency requires kinesthetic memory: the signer must remember not the abstract location but the arm configuration that reaches that location. Inconsistent arm angles can break spatial cohesion, making it unclear whether the signer is referring to the previously established referent or introducing something new.

Establishing Multiple Referents

Discourse often involves multiple referents tracked simultaneously. ASL handles this through spatial distribution: each referent receives a location, and the signer maintains these distinct locations through consistent arm positioning.

A conversation about JOHN and MARY might establish JOHN on the left and MARY on the right. The arm extends toward the left to establish and reference JOHN, and extends toward the right to establish and reference MARY. These different arm configurations become associated with the different referents.

Additional referents require additional locations. A discourse about JOHN, MARY, and THEIR-CHILD might establish the child at a third location: center, or at a different vertical level, or at a diagonal position. Each establishment requires arm positioning, and each subsequent reference requires returning to approximately the same configuration.

The complexity of multi-referent tracking places demands on both production and comprehension. The signer must control multiple arm configurations and switch among them fluidly. The viewer must perceive arm positioning differences and associate them with the correct referents. This shared spatial grammar requires precision from both parties.

When locations begin to drift, or when too many referents crowd the available space, discourse can become confusing. Skilled signers manage this by: using vertical differentiation to add capacity, periodically re-establishing important locations, allowing less important referents to fade from active spatial tracking, and being willing to restructure the spatial arrangement if it becomes unwieldy.

Common Learner Error: Drifting Loci

A frequent error among intermediate signers is allowing established locations to drift over the course of a discourse. JOHN is established on the left, but subsequent references gradually shift rightward. MARY is established on the right, but later references move toward center.

This drift often occurs unconsciously, especially when the signer is cognitively loaded with vocabulary retrieval, grammatical planning, or content organization. Maintaining spatial consistency requires active attention until it becomes automatic through extensive practice.

The remedy involves deliberate practice with spatial consistency. Establish two or three referents at clearly distinct locations, narrate extended content involving those referents, and monitor (through video review or partner feedback) whether the locations remain stable throughout. If drift occurs, identify where attention lapses and practice maintaining consistency through those portions.

Verb Agreement and Directional Movement

Many ASL verbs agree with their arguments by moving between locations in signing space. These indicating verbs (also called directional verbs or agreement verbs) include GIVE, TELL, ASK, SHOW, INFORM, HELP, SEND, INVITE, and many others. This text uses "indicating verb" as the primary term; readers will encounter all three labels in other literature. Many indicating verbs can be directed so that their movement is interpreted relative to established loci for participants. In many common uses, the start of the movement aligns with the giver, teller, or actor, and the end aligns with the recipient or addressee, though verb-specific conventions and discourse context shape the mapping.

Producing these verbs correctly requires arm control. The sign GIVE typically moves from the signer (or the subject location) toward the recipient (the object location). If JOHN is established on the left and MARY on the right, GIVE[a>b] (John gives to Mary) involves movement from left toward right. The arm must orient to begin at the left location and move toward the right, requiring adjustment of shoulder and elbow to produce the correct trajectory.

The starting and ending positions of indicating verbs must align with established referent locations. If arm angles do not match established positions, verb agreement is unclear or incorrect. A verb intended to show John giving to Mary but produced with movement toward the wrong location miscommunicates the relationship.

Multiple verb agreements in sequence require the arm to reset between verbs. Having produced GIVE[a>b] (left to right), a subsequent TELL[b>a] (right to left) requires the arm to reposition to begin from the right and move toward the left. This repositioning should be smooth enough to maintain discourse flow but clear enough to distinguish the two verb agreements.

Role Shift and Spatial Orientation

Role shift (also called constructed action or constructed dialogue) involves taking on a character's perspective to present their actions, thoughts, or speech. When a signer shifts into a character, they typically turn toward the spatial location associated with another character and produce signs from that character's perspective.

Consider a narrative involving JOHN and MARY having a conversation. Having established JOHN on the left and MARY on the right, the signer might shift to enact JOHN by turning the body slightly to the right (facing where MARY is established) and producing JOHN's utterances. From this shifted perspective, signs directed toward the addressee go toward the right. The arm angles used during this shift must be consistent with the established spatial arrangement.

When the signer shifts to enact MARY, the body turns to the left (facing where JOHN is established), and signs directed toward JOHN go toward the left. The arm's orientation relative to the body changes as the body changes orientation, but the locations in absolute space remain constant.

This maintenance of spatial consistency during role shift is cognitively demanding. The signer must track their own orientation, the character's perspective being enacted, the locations of other characters in signing space, and the relationship between body-relative and space-relative positioning. The arm must reach toward the correct absolute location regardless of current body orientation.

Learners often struggle with role shift because they let loci drift with the body shift. They keep indicating "addressee" to the same body-relative side rather than preserving the original loci in absolute signing space.

To illustrate: if JOHN is established at your left (viewer's right) and MARY at your right (viewer's left), and you shift your torso right to become JOHN, then JOHN's "toward MARY" still points to the original MARY locus at your right, not simply "to your right side now." The loci remain fixed in absolute space; your body moves within that space.

The remedy requires practicing role shift with explicit attention to maintaining absolute spatial reference across body orientation changes.

Comparative and Contrastive Constructions

ASL frequently uses spatial contrast to structure comparisons. Two items being compared are established at different locations, and the signer alternates between locations while making comparative statements.

A comparison of OPTION-A and OPTION-B might establish OPTION-A on the left and OPTION-B on the right. Discussing OPTION-A's advantages, the signer orients toward the left; discussing OPTION-B's advantages, the signer orients toward the right. The arm moves between these locations, and the movement itself becomes part of the comparative structure.

List structures similarly use spatial distribution. A list of three items might be established at three locations (left, center, right, or along a diagonal), and the signer's arm visits each location when discussing each item. The spatial organization helps the viewer track the list structure.

Physical Constraints on Lateral Reach

The arm's reach to the left and right is not symmetrical. Shoulder rotation and the arm's natural orientation favor reaching toward the side of the dominant hand. For a right-handed signer, reaching to the right involves relatively easy shoulder abduction and rotation, while reaching to the left requires reaching across the body with more constrained positioning.

This asymmetry affects how signing space is used. Some signers organize spatial references to take advantage of this asymmetry, placing more frequently referenced items on the dominant-hand side. However, fluent signers routinely use both sides of signing space, and the asymmetry is not extreme.

The important point for learners is that reaching to the non-dominant side requires different arm configurations than reaching to the dominant side. Both configurations must be practiced.

Conclusion

The left-right dimension provides the primary field for spatial reference in ASL. Indexing establishes locations for referents, and subsequent arm positioning maintains these locations through verb agreement, classifier predicates, and pronoun reference. Multi-referent discourse requires managing multiple spatial locations with distinct arm configurations.

Role shift maintains spatial reference from different character perspectives, requiring arm adjustment relative to body orientation. Contrastive and comparative structures use spatial distribution to organize relationships. Precision in arm positioning is essential for comprehensible spatial grammar.

The next chapter examines how proximal versus distal articulation correlates with register, emphasis, and other sociolinguistic factors.

CHAPTER FIVE

Proximal Articulation and Register Variation

The distinction between proximal and distal articulation, introduced in Chapter One, has sociolinguistic consequences. Signs can be produced with primary movement originating from the shoulder (most proximal), the elbow, the wrist, or the fingers (most distal). This articulatory choice often correlates with register, emphasis, visibility requirements, and social context, though the correlation is a tendency rather than a rule.

This chapter examines proximal articulation and its associations. We consider formal register, emphatic modification, platform signing, and dialectal variation, while attending to the limits and exceptions of these associations.

Biomechanical Basis

The shoulder joint permits the greatest range of movement in the arm chain. When a sign requires large excursion, extended positions, or movement through multiple planes, shoulder involvement is biomechanically necessary. The wrist cannot raise the arm; only the shoulder can. The wrist cannot reach across the body to the contralateral side; the shoulder must reposition the arm.

Beyond biomechanical necessity, there is articulatory choice. Many signs that could be produced with minimal shoulder involvement are instead produced with deliberate shoulder engagement. This choice can carry meaning.

Proximal articulation requires more muscular work than distal articulation. A sign produced with full arm extension requires more energy than the same sign produced with just wrist movement. This effort is visible to viewers and can be interpreted as investment, formality, or emphasis. The physical and the social connect: more effort may signal more significance.

Formal Register and Platform Signing

Formal signing contexts often favor more proximal articulation. These contexts include public presentations and lectures, interpreting for large audiences, formal ceremonies, academic and professional discourse, and official communications.

In these contexts, signers' movements tend to expand. Signs are produced larger, with more complete movement paths. The signing space expands. The shoulder engages more actively. This

expansion serves visibility (larger movements are more visible to distant viewers) and social expectation (formal contexts expect more deliberate production).

Platform signing, produced in presentation contexts visible to many viewers, typically involves adaptation not just in size but in positioning. The signing space may orient more frontally (facing the audience rather than an individual interlocutor), and signs may be produced at slightly elevated height to be visible above intervening heads.

For interpreters, proximal articulation is a professional skill. Interpreters must scale their signing to the venue: more proximal articulation for large audiences, more distal articulation for smaller or closer audiences. This scaling requires conscious attention to shoulder engagement and arm positioning.

However, the association between formal register and proximal articulation is a tendency, not a rule. Individual signers vary. Some native signers maintain relatively compact signing across registers. Some use expansive signing even in casual contexts. The correlation is observable across many signers but not mechanically predictable for any individual signer in any individual instance.

Emphatic Modification

Within any register, increased proximal involvement can mark emphasis. A sign produced with more shoulder engagement than expected may convey intensification, importance, or emotional investment.

This emphatic function is gradient. Small increases in proximal involvement produce small emphatic effects; large increases produce larger effects. A slightly enlarged production of ANGRY conveys mild emphasis; a greatly enlarged production with full arm engagement conveys extreme anger.

The emphatic function interacts with other emphasis markers. Non-manual intensifiers (facial expression, body tension) often accompany emphatic proximal articulation. Increased movement duration and altered movement quality also convey emphasis. Proximal enlargement is one tool among many, and it typically co-occurs with other markers rather than standing alone.

Casual Register and Distal Compression

Casual signing contexts often involve more distal articulation. These contexts include familiar conversation, informal settings, rapid dialogue, and intimate communication.

In casual contexts, the signing space may contract. Signs are produced smaller, with more wrist and finger involvement and less shoulder engagement. Signs lexically specified for elevated or extended positions might be produced closer to neutral, with reduced arm excursion.

This casual compression reflects efficiency: distal articulation requires less energy, allowing faster production with less fatigue. It also reflects social context: intimate settings do not require the visibility or formality associated with expanded signing.

The weak drop phenomenon illustrates casual compression. In some two-handed symmetrical signs, casual production may involve the non-dominant hand dropping out, producing a one-handed variant. The non-dominant shoulder disengages first, allowing the arm to rest while the dominant hand carries the sign. This reduction is common in casual registers and becomes more frequent as signing speed increases.

Dialectal and Community Variation

Signing communities vary in typical proximal involvement. Some of this variation correlates with educational background, particularly whether signers attended residential schools or were mainstreamed.

Residential schools for deaf students historically provided immersive signing environments where large groups of signers interacted across distances: in hallways, across dining halls, on playing fields. Larger, more proximal articulation developed as appropriate for these visual-distance contexts. Signers from residential school backgrounds often maintain larger signing spaces and more proximal articulation throughout their lives.

Mainstreamed deaf students, attending schools primarily with hearing students, had fewer signing interlocutors and less exposure to distance signing. Signing often occurred in more intimate contexts with a single interpreter or a few signing peers, where smaller, more distal articulation was adequate.

However, educational background is one factor among many, including region, community norms, family language environment, and professional experience. These are tendencies with many exceptions. Neither signing style is correct or incorrect; they are variations reflecting different environments and experiences.

Black ASL and Signing Space

Research on Black ASL (BASL) has documented distinctive features that include, among other characteristics, larger signing spaces and more frequent use of two-handed sign variants. This variation reflects the historical development of BASL in segregated residential schools, where distinct norms developed within Black Deaf communities.

BASL signers may employ more proximal articulation as a community norm, not as emphasis or formality marking, but simply as the baseline expectation within their variety. What might look

"emphatic" to a signer unfamiliar with BASL may be unmarked, neutral production within that community.

This variation has pedagogical implications. Textbooks and curricula often describe a "standard" signing space based primarily on white, middle-class signing norms. Learners should understand that these descriptions represent one variety, not a universal standard. Encountering signers who use larger or smaller signing spaces than the textbook describes does not indicate that those signers are doing something wrong; it indicates legitimate variation across communities.

For non-Black learners: treat BASL features as part of receptive competence and variation awareness, not a target style to adopt. Attempting to imitate BASL signing space without community membership risks appropriation. The goal is understanding variation, not imitating varieties to which one does not belong.

When Proximal Articulation Is Lexically Required

Some signs lexically require proximal articulation. These are signs whose movement paths or locations require shoulder involvement regardless of register or emphasis.

Signs involving full arm extension (certain classifiers representing airplanes or wide objects), signs contacting locations far from neutral space (overhead signs, signs behind the shoulder, signs far laterally), and signs with circular or sweeping movements covering large areas often engage the shoulder as the primary articulator.

For these signs, proximal articulation is phonological, not sociolinguistic. Producing these signs with reduced arm involvement may distort them beyond recognition.

However, even lexically proximal signs admit some variation. In casual register, a lexically proximal sign might be produced with slightly less extension than citation form. In formal register, it might be produced with even more extension. The lexical specification establishes a baseline, and register variation modulates around that baseline.

Practical Implications

For developing appropriate proximal/distal modulation, consider the following:

First, observe native signers across contexts. Notice how signing space and arm involvement change between casual and formal settings. Different signers will show different patterns; observe the range.

Second, practice deliberate scaling. Take familiar signs and produce them with minimal proximal involvement, with citation-form involvement, and with maximal proximal involvement. Feel the difference. Know what each level looks like and what effort it requires.

Third, match your register to context. In formal settings, allow your signing space to expand and your shoulder to engage more. In casual settings, allow compression and distal concentration. Do not produce all signing at a single register-invariant level.

Fourth, be cautious about over-interpreting proximal involvement. Not every large sign is emphatic. Not every compact sign is casual. Individual and community variation, physical constraints, and other factors affect production.

Conclusion

Proximal articulation, engaging the shoulder and upper arm, often correlates with formal register, emphatic expression, and platform signing, while distal articulation often correlates with casual register and intimate contexts. This correlation is a tendency observed across many signers but not a mechanical rule.

Dialectal variation, including differences between residential school and mainstreamed backgrounds and distinctive features of Black ASL, affects baseline expectations for signing space. Some signs lexically require proximal articulation regardless of register. Advanced signers learn to modulate their proximal/distal involvement deliberately while recognizing that native signers vary in their patterns.

The next chapter examines classifier predicates and the arm's role in representing physical objects, movement, and spatial relationships.

CHAPTER SIX

Classifier Predicates and the Arm as Articulator

Classifier predicates (also called depicting constructions or depicting verbs in some analyses) are among the most spatially productive constructions in ASL. In these predicates, handshapes represent categories of entities, and the movement of these handshapes through signing space represents action, location, and relationship. What receives less attention is the arm's role. The arm is not merely a carrier for the classifier handshape; in many constructions, the arm itself contributes to the representation.

This chapter examines classifier predicates with particular attention to arm involvement: how the arm represents elongated referents, how arm positioning indicates handling and manipulation, how arm movement traces paths and trajectories, and how arm configuration conveys size, shape, and manner.

A Note on Terminology

The term "classifier" in sign language linguistics is debated. Some researchers prefer "depicting verb" or "depicting construction" because "classifier" implies an analysis that some find incomplete or misleading. This book uses "classifier predicate" as the more widely recognized term in ASL pedagogy while acknowledging that alternative terminology exists in the literature.

Whatever the label, these constructions share the characteristic of using handshapes productively to represent entities and their spatial relationships, with movement showing action, path, or location.

The Arm as Extension of the Handshape

In basic classifier instruction, attention focuses on handshapes: the 3-handshape for vehicles, the 1-handshape for upright persons, the bent-5-handshape for animals, and so on. But the handshape alone does not determine meaning. The arm's position and movement contribute essential information.

A 3-handshape (vehicle classifier) moved slowly in a straight line represents a vehicle driving straight. The same handshape moved in a curved path represents a vehicle turning. The same handshape moved sharply downward represents a vehicle falling or crashing. The arm provides the movement path that specifies the action.

Beyond movement, the arm's position determines the entity's location in represented space. A vehicle classifier held in high space represents a vehicle in an elevated location (on a bridge, on a hill). The same classifier in low space represents a vehicle at ground level. A vehicle classifier on the left is

spatially positioned to the left in the depicted scene. The arm positions the classifier where it needs to be.

When representing elongated entities, the arm can extend the classifier beyond the hand. A snake might be represented by a classifier handshape for the head, with the forearm representing the snake's body extending behind. A stick or pole might be represented by the forearm itself. A road might be represented by the non-dominant arm extended horizontally, with a vehicle classifier on the dominant hand traveling along it.

In these extended constructions, the arm is part of the representation, not just a positioning mechanism. Understanding this extended role is important for both production and comprehension.

The Non-Dominant Arm as Ground

In many classifier constructions, the two arms divide roles. The non-dominant arm often provides what might be called the "ground": the stable reference surface or environment against which the dominant hand's "figure" acts.

The non-dominant arm might represent a road while the dominant hand shows a car traveling on it. The non-dominant arm might represent a tabletop while the dominant hand shows an object placed on it. The non-dominant arm might represent a tree trunk while the dominant hand shows a bird landing on it.

This ground function requires the non-dominant arm to hold position while the dominant hand moves. The position must be stable; if the ground arm drifts, the relationship between figure and ground becomes ambiguous. A car that was traveling "on the road" might suddenly appear to be traveling "beside the road" if the non-dominant arm shifts during the construction.

Maintaining ground stability requires isometric muscular engagement. The non-dominant arm is not relaxed; it is actively holding position. This sustained hold can be fatiguing, which limits how long ground constructions can be maintained comfortably.

Handling Classifiers and Arm Configuration

Handling classifiers represent how entities are held, grasped, or manipulated. The handshape shows the grip, but arm configuration shows orientation, effort, and characteristics of the held object.

Carrying a small, light object involves a handshape for gripping but minimal arm involvement: the arm stays near the body, relaxed, with casual movement. Carrying a large, heavy object involves a wider grip handshape but also significant arm configuration: the arm may be more tensed, the elbow more engaged, the movement effortful and slower. Weight and size are conveyed through arm configuration as much as through handshape.

Pouring from a container involves the hand shaping around the container, but the pouring action comes from forearm rotation (pronation), tipping the imaginary container. Throwing involves arm movement as the primary articulator: the arm draws back (shoulder extension, elbow flexion), then propels forward (shoulder flexion, elbow extension).

The manner of handling, its care or carelessness, its ease or difficulty, appears in arm movement quality. Setting an object down carefully involves controlled, slower arm movement with perhaps a held position at the end. Setting it down carelessly involves quicker, less controlled movement with abrupt ending. The arm embodies the manner.

Size and Shape Specifiers

Size and shape specifiers (SASS constructions) use hands and arms to trace or indicate dimensions and contours of objects. The relationship between arm extension and referent size is iconic: larger arm movements represent larger objects.

For large objects, SASS constructions involve arm extension. Indicating a building's size requires arms extended wide for width, reaching high for height, possibly moving apart sagittally for depth. The arms trace the building's contours.

For smaller objects, arm involvement is less but not absent. Indicating a book's size involves arm positioning that places hands at book-sized separation. Indicating a pea's size involves hands close together, with arms positioned to hold the hands appropriately.

A signer describing a large object with small arm movements conveys either a small object or lack of investment in the description. A signer describing a small object with large arm movements conveys either a large object or emphatic characterization. The iconicity is strong.

Depicting Action and Manner

Depicting verbs convey not just that an action occurred but how it occurred. The manner of action, its speed, care, casualness, difficulty, appears through arm movement quality.

A classifier predicate showing a person walking normally involves regular, rhythmic movement at moderate arm involvement. The same predicate showing slow walking involves slower, more deliberate arm movement. Fast walking involves faster movement. Tired or reluctant walking involves different arm tension and rhythm.

Effort and difficulty appear through arm tension. An action performed easily involves relaxed, fluid arm movement. An action performed with difficulty involves tensed, effortful arm movement, perhaps slower, perhaps with visible strain. The physical effort in the signer's arm iconically represents physical effort in the depicted action.

These manner distinctions are gradient and can layer. A single depicting verb can simultaneously convey speed (through movement pace), care (through control), and effort (through tension). Viewers perceive these qualities through the same embodied understanding that allows perceiving effort or ease in any observed movement.

Two-Armed Classifier Constructions

When both arms represent entities, their coordination provides additional representational power.

In constructions where both arms represent similar entities (two cars approaching each other, two people meeting), the arms move symmetrically or toward each other. The coordination carries meaning: two entities approaching are represented by two classifiers approaching.

In constructions where arms represent different entities (a car on a road, a person opening a door), the arms divide roles as discussed above. The relative positions matter. A bird flying over a tree uses one arm for the tree and the other moving the bird classifier above it. The spatial relationship between arms represents the spatial relationship between entities.

These constructions require independent arm control, with each arm maintaining its configuration and movement independently. This independence is challenging for learners whose kinesthetic habits involve symmetrical arm movement.

Conclusion

Classifier predicates use the arm as more than a carrier for handshapes. The arm positions classifiers in representative space, provides movement paths that depict action, represents elongated entities through its own extent, and conveys manner through movement quality. The non-dominant arm often provides stable ground against which the dominant hand's figure moves.

Understanding the arm's role in classifier constructions helps both production and comprehension. Producing classifiers with appropriate arm involvement creates naturalistic, readable predicates. Comprehending classifiers requires attending to arm configuration and movement, not just handshape.

The next chapter examines two-handed signs more broadly, exploring how arms coordinate in signs requiring both hands.

CHAPTER SEVEN

Two-Handed Signs and Arm Coordination

ASL includes thousands of two-handed signs, and the coordination of both arms involves specific constraints and possibilities. The arms do not move independently and arbitrarily; they are organized by phonological principles that constrain permissible relationships between them.

This chapter examines two-handed signs with attention to arm coordination: symmetrical signs, asymmetrical signs, the phonological constraints organizing these possibilities, and discourse-level phenomena involving sustained positioning of one arm while the other continues signing.

Battison's Constraints

The linguist Robbin Battison identified two constraints that organize two-handed signs in ASL. These constraints describe the permissible relationships between the two hands and, by extension, the two arms.

The Symmetry Condition states: if both hands move in a two-handed sign, they must share the same handshape, the same location (or mirror-image locations), and the same movement (either identical or mirror-image). This permits signs like PLAY (both hands in A-handshape, both moving in the same circular motion) or MAYBE (both hands flat, alternating up and down in mirror-image movement). It prohibits signs where both hands move with different handshapes or unrelated movements.

The Dominance Condition states: if the hands have different handshapes in a two-handed sign, the non-dominant hand is restricted to a small set of unmarked handshapes (A, S, B, C, O, 1, and a few others) and typically remains stationary while the dominant hand moves. This permits signs like WRITE (dominant hand holds a writing instrument shape, non-dominant hand holds a flat B representing paper, dominant hand moves) or BOOK (non-dominant hand flat, dominant hand opens against it).

These constraints reflect natural principles of motor coordination and perceptual organization. Symmetrical movements are easier to coordinate than asymmetrical movements. Holding a simple handshape stationary while the other hand moves is easier than holding a complex handshape stationary or moving both hands with different patterns.

Symmetrical Two-Handed Signs

Symmetrical signs require both arms to work together in identical or mirror-image motion. This coordination presents specific requirements.

For identical motion, both arms perform the same movement simultaneously. The sign BOAT involves both hands in the curved shape of a boat hull, moving forward together in a rocking motion. Both arms must move in the same path at the same time, requiring coordination of shoulder, elbow, and wrist on both sides.

For mirror-image motion, the arms perform opposite movements creating visual symmetry. The sign BALANCE involves both hands moving up and down alternately. The arms move in opposition: when one elbow extends, the other flexes. This alternating pattern requires coordinated opposition rather than identical movement.

Producing symmetrical signs requires distributing effort across both arms. In casual signing, the non-dominant arm may contribute less than the dominant arm, with slight asymmetry in movement size or precision. In formal or emphatic signing, both arms should contribute equally. This equal contribution requires conscious attention, especially for signers whose dominant arm naturally does more work.

Symmetry breakdown is a common error in learner signing. The dominant arm may move more fully than the non-dominant, or one arm may begin or end movement slightly before the other. Practicing symmetrical signs with explicit attention to equal arm involvement addresses this error.

Asymmetrical Two-Handed Signs

Asymmetrical signs divide labor between arms. The non-dominant arm typically provides a base while the dominant arm articulates against or around that base. This division requires the arms to do different things simultaneously.

The base arm (non-dominant) must hold position while the articulating arm (dominant) moves. This requires sustained isometric contraction: muscles engage to hold position without producing movement. Holding the arm in certain positions (extended forward, elevated) requires more effort than others.

The articulating arm produces movement relative to the base arm. The sign IMPROVE involves the dominant hand moving up the non-dominant arm like climbing stairs. The dominant arm produces upward movement while tracking the position of the non-dominant arm. The two arms are independent but related.

Learning asymmetrical signs requires developing independent control of each arm. Many people habitually move their arms together; asymmetrical signs require overcoming this habit. Practice focusing specifically on base arm stability helps develop this independence.

The Weak Drop: Casual Reduction in Two-Handed Signs

In casual register, the non-dominant hand often drops out of symmetrical signs, producing a one-handed variant. This weak drop is systematic: the non-dominant shoulder disengages first, allowing that arm to rest while the dominant hand carries the sign.

Signs that have two-handed symmetrical variants may reduce to one-handed production in casual signing. Examples vary by community, but signs like SAME, MAYBE, and ALIKE, where both hands perform identical movements, often show weak drop in rapid or informal contexts. The meaning remains clear from one hand alone, and the non-dominant arm's disengagement reflects register-appropriate reduction rather than error.

The weak drop illustrates how arm mechanics interact with register. The non-dominant arm's disengagement is a biomechanical reduction that occurs more frequently in casual, rapid signing. In formal contexts, both arms typically maintain involvement.

Understanding weak drop helps learners recognize casual variants they encounter and helps them produce appropriate register variation. Producing all two-handed signs with full bilateral involvement in casual contexts can sound overly formal or stilted.

Buoys: Sustained Non-Dominant Positioning

In extended discourse, the non-dominant hand sometimes holds a sign or handshape while the dominant hand continues signing. This holding, called a buoy, maintains a referent or topic visually present while new information is added.

When the non-dominant hand serves as a buoy, the arm must maintain position across multiple signs produced by the dominant arm. This sustained holding requires active muscular engagement. The duration depends on discourse needs; a buoy might be held briefly or for an extended passage.

Common buoy types include:

List buoys: holding up fingers to track items in a list, touching each finger as items are enumerated

Topic buoys: holding a sign representing the discourse topic while elaboration is produced

Referent buoys: holding an index or classifier representing a previously established referent

Managing buoys requires stamina. Holding the arm in a non-resting position leads to fatigue. Fluent signers manage this by choosing sustainable buoy positions, releasing buoys when no longer needed, and occasionally re-establishing buoys with brief rest between.

For learners, practicing buoys develops the ability to decouple the arms. The dominant arm must continue fluent signing while the non-dominant arm holds still. This is counterintuitive for learners whose tendency is to let both arms move together.

Fingerspelling and Arm Position

Fingerspelling has conventional arm positioning. The spelling hand is typically positioned in neutral space, slightly to the dominant side, with the elbow flexed to approximately ninety degrees and the forearm roughly vertical or slightly angled.

This positioning balances visibility (the hand is visible in the viewer's central vision when looking at the face) and comfort (the arm is in a sustainable position for rapid hand movements).

Variations in fingerspelling arm position can carry meaning. Fingerspelling produced higher (raised toward face level) may indicate names or proper nouns deserving emphasis. Fingerspelling produced lower or more casually may indicate common terms or informal contexts.

The arm's stability during fingerspelling affects legibility. Letters are produced by finger and hand movements; the arm should remain relatively still to provide a stable frame. Excessive arm movement makes letters harder to read.

A Note on Left-Handed Signers

This text, like most ASL materials, describes signing from the perspective of right-handed signers, with the right hand as dominant and the left as non-dominant. Left-handed signers transpose these references.

For left-handed signers, spatial references conventionally assigned to the right side of space may instead be produced on the left, and vice versa. The linguistic function remains constant; only the motor realization mirrors. If a right-handed signer establishes referent A on the left and referent B on the right, a left-handed signer discussing the same content may choose mirrored placements, especially when establishing loci with the dominant hand.

This transposition is natural and does not affect comprehension among fluent signers. Viewers adjust to a signer's handedness automatically. However, learners should be aware that descriptions in teaching materials may need mental transposition.

When this book uses spatial descriptions like "the arm extends toward the left," left-handed readers should understand this as "the arm extends toward the non-dominant side." The underlying principle involves dominant versus non-dominant, not absolute left versus right.

Conclusion

Two-handed signs involve arm coordination governed by phonological constraints. Symmetrical signs require matched arm movements; asymmetrical signs require different roles for each arm. Casual register may involve weak drop, where the non-dominant arm disengages. Buoy constructions require the non-dominant arm to hold position across extended discourse.

Developing arm coordination for two-handed signs involves practicing symmetrical and asymmetrical patterns, building stamina for sustained holds, and developing the independence to move one arm while the other maintains position.

The next chapter focuses on the elbow specifically as the pivot point mediating between proximal and distal articulation.

CHAPTER EIGHT

The Elbow as Pivot Point

The elbow occupies a central position in the arm chain: between the shoulder (with its multidirectional mobility) and the wrist and hand (with their fine motor control). As a hinge joint, the elbow performs one primary action, flexion and extension, but this simple action has complex consequences for sign production. The elbow's angle determines how far the hand reaches from the body, mediates between proximal and distal articulation, and serves as a pivot point for many sign movements.

Anatomical Specifics

The elbow joint is primarily a hinge, permitting flexion (bringing the forearm toward the upper arm) and extension (straightening the arm). The typical range spans from full extension (zero degrees, a straight arm) to approximately one hundred fifty degrees of flexion.

The elbow also participates in forearm rotation (pronation and supination), though this movement occurs at the radioulnar joints rather than the elbow hinge itself.

The muscles controlling elbow flexion (primarily the biceps brachii) and extension (primarily the triceps brachii) are relatively large and powerful. Elbow movements can be rapid and precise. The elbow is intermediate in speed and precision between the shoulder (slower, less precise) and the wrist and fingers (faster, more precise).

Elbow Angle in Sign Distinctions

Some signs are distinguished by elbow angle. The sign NEAR involves something close, often produced with a flexed elbow bringing the hand close to the body. The sign FAR involves something distant, produced with an extended elbow reaching away. The conceptual distinction maps onto the elbow angle distinction in one common iconic mapping, though these signs can be realized through multiple articulatory strategies depending on context and signer.

In classifier predicates, elbow angle determines the perceived position of the represented entity. A vehicle classifier with a flexed elbow is located closer in the represented space than the same classifier with an extended elbow. This spatial positioning is continuous: any elbow angle maps to a corresponding location.

The Elbow in Movement Paths

Many signs involve curved or arc-shaped movement paths, and the elbow often serves as the pivot point around which arcs are traced. If the shoulder remains fixed and the elbow flexes and extends cyclically, the hand traces an arc. If the shoulder moves while the elbow also moves, more complex paths are possible.

Understanding these mechanics helps produce accurate movement paths. A sign that should move in an arc but is produced with a straight line, or vice versa, may be unrecognizable.

The Elbow as Transition Manager

In connected signing, the elbow plays a crucial role in coarticulation: the blending of adjacent signs into fluid discourse. Between signs, the elbow adjusts anticipatorily, preparing for the next sign's location before the current sign is complete.

Consider a sequence moving from a sign at chest height to a sign requiring forward extension. During the first sign's completion, the elbow begins extending, positioning the arm for the upcoming reach. This anticipatory adjustment prevents choppy, segmented signing and creates the continuous flow characteristic of fluent production.

The elbow serves as an "economizer" that prevents full shoulder re-aiming between every sign. Small elbow adjustments can compensate for modest location changes without requiring the shoulder to reposition. Only when target locations differ significantly does the shoulder need to engage. Fluent signers develop intuitive calibration of when elbow adjustment suffices and when shoulder repositioning is necessary.

This transition management is largely unconscious in fluent signing but can be developed through deliberate attention in learners. Watching fluent signing with specific attention to elbow movement during transitions reveals patterns invisible when attending only to handshapes and locations.

Elbow Angle and Coupled Articulators

Although the elbow is anatomically a hinge with one degree of freedom, its perceptual effect in signing is not one-dimensional. Elbow angle interacts with other articulators to produce the perceived distance and positioning of signs.

Elbow flexion often couples with shoulder protraction (the shoulder moving forward) and trunk lean. A signer reaching toward something "close" may flex the elbow while also protracting the shoulder and leaning slightly forward. The combined effect is greater than any single adjustment.

Elbow extension often co-occurs with broader upper-body and shoulder complex adjustments, including changes in scapular position and trunk posture, which together create the percept of distance. Reaching toward something "far" involves not just elbow extension but the whole upper body configuration shifting.

This coupling means that "elbow angle" as a concept is somewhat artificial. In practice, the perceived distance or position results from the configuration of multiple articulators. When coaching learners on elbow positioning, attention to accompanying shoulder and trunk positioning improves outcomes.

Elbow Locking: A Common Learner Error

Intermediate learners, particularly those who feel nervous or self-conscious about signing, sometimes "lock" the elbow, holding it rigidly at a fixed angle rather than allowing natural flexion and extension.

Elbow locking often accompanies the "T-Rex arms" pattern described in Chapter One: elbows pinned to the ribs, with all movement transferred to the forearms, wrists, and hands. When the elbow is locked, the shoulder must work harder to achieve location changes, and the signing appears stiff and constrained.

During fingerspelling, elbow locking is particularly problematic. The rapid hand movements of fingerspelling benefit from a relaxed, stable arm with the elbow serving as a flexible support. When the elbow locks, tension transfers to the shoulder, fatigue increases, and the fingerspelling becomes jerky rather than fluid.

The remedy involves conscious relaxation of the elbow joint. Signers can practice allowing the elbow to float, flexing and extending slightly as signs require, rather than holding a fixed angle. Shaking out the arms between practice sessions and checking for elbow tension periodically helps develop awareness.

Elbow Extension and Emotional Expression

The degree of elbow extension can convey emotional intensity. Signs produced with more extension than usual may convey heightened emotion; signs produced with less extension may convey restraint.

An emphatic assertion produced with full elbow extension, reaching into space, conveys conviction and force. The same content produced with minimal elbow extension, arm held close to the body, conveys tentativeness or uncertainty.

This association parallels gesture more broadly. Expansive gestures convey openness and confidence; contracted gestures convey reserve or self-protection.

Elbow as Register Pivot

The elbow mediates between proximal and distal articulation. Extended elbows bring shoulder movement into play; flexed elbows allow the shoulder to rest while the wrist and fingers work.

What Chapter Five described sociolinguistically, this chapter reframes mechanically: elbow angle is one of the fastest, least disruptive ways to scale a sign's size and intensity without re-aiming the entire shoulder complex. Formal register typically involves more elbow extension and shoulder engagement. Casual register involves more elbow flexion and distal concentration. Learning to modulate register involves learning to modulate elbow angle.

Conclusion

The elbow is deceptively simple: a hinge that flexes and extends. But this simple joint manages transitions between signs, mediates between proximal and distal articulation, couples with shoulder and trunk to create perceived distance, and can lock up in ways that constrain the entire signing system.

Developing elbow awareness involves both relaxation (releasing locking tension) and control (managing anticipatory transitions). The goal is an elbow that serves its pivot function fluidly, adjusting continuously as signing requires rather than holding rigidly or flopping loosely.

CHAPTER NINE

Non-Manual Markers and Arm Integration

ASL is a language of the face and body as well as the hands and arms. Non-manual markers, including facial expressions, eye gaze, head position, and body posture, carry essential grammatical information. Questions are marked on the face; negation involves head movement; topics are set off by brow position; conditionals have characteristic non-manual configurations.

The arms do not operate independently; they coordinate with non-manual markers in an integrated system. This chapter examines that coordination, with particular attention to timing, scope, eye gaze, and the requirement that arm positioning not obstruct the grammatically essential face.

Question Marking and Arm Position

Yes/no questions involve raised eyebrows and often forward lean. These markers frequently co-occur with slight arm extension: the hand presenting questioned content may move slightly forward, offering the proposition for confirmation.

WH-questions involve furrowed brows and often arm positioning that directs the question word toward the interlocutor.

The coordination must be timed correctly. Eyebrows should raise or furrow as the questioned content is produced, and arm positioning should occur during the same window.

Topic-Comment Structure

Topic-comment structure involves raised eyebrows over the topic, a brief pause at the boundary, then the comment. The arm often repositions between topic and comment, contributing to the boundary marking.

Conditional Clauses

Conditional structures involve raised eyebrows during the condition clause, different marking during the consequence. Arm positions for condition and consequence may differ spatially. Holding arm position during the condition with raised eyebrows maintains the conditional frame; repositioning as eyebrows lower signals the shift to consequence.

Non-Manual Scope and Spreading

Non-manual markers are not point features attached to single signs; they spread over constituents. Understanding scope is essential for correct arm-NMM coordination.

In yes/no questions, the raised eyebrows typically spread over the entire questioned proposition, not just the final sign. If the question is "Are you going to the store tomorrow," the brow raise extends from the beginning of that proposition through its end. The arm positioning should maintain its questioning orientation throughout this scope, not just at one moment.

In negation, the headshake may spread over the entire negative clause, not just the sign NOT. A sentence meaning "I don't want to go" might have headshake extending from I through GO, or from NOT through GO, depending on the scope of negation. The arm maintains its configuration through the headshake scope.

In topic marking, raised eyebrows extend over the entire topicalized constituent. If the topic is "that book you lent me," the brow raise covers that whole phrase, with the arm positioning the topicalized content appropriately.

Learners often err by starting non-manual markers too late (only on the final sign of a question) or ending them too early (dropping brow raise before the topic is complete). These timing errors can co-occur with arm positioning errors: the arm begins returning to neutral before the non-manual scope is complete. Practicing extended scope with stable arm positioning develops proper coordination.

Eye Gaze and Spatial Reference

Eye gaze is the primary disambiguator connecting arm positioning to referential meaning. Where the eyes look determines whether a point is referential (indicating an established locus), depictive (showing action within a depicted scene), or rhetorical (emphasizing for the interlocutor).

When establishing a referent at a location, the signer typically looks toward that location while pointing or signing the establishing content. The eye gaze "activates" the location as referential. Subsequent references to that location should include gaze toward it, at least briefly, to confirm the reference.

A common learner error is pointing without gaze shift. The arm extends toward an established locus, but the eyes remain on the interlocutor. This disconnect weakens the referential link. The viewer may be uncertain whether the point is truly referential or merely gestural.

The opposite error also occurs: gaze shift without stable arm positioning. The eyes move toward a locus, but the arm does not reach the correct location, or the arm drifts during the gaze. This inconsistency between gaze and arm placement creates ambiguity.

Fluent signing coordinates gaze and arm position: the eyes look where the arm points, and the arm points where the eyes look. This coordination locks referential meaning in place.

However, gaze is not rigidly required on every reference. In fast discourse, when loci are highly activated and the spatial map is well established, gaze may be brief or reduced. Signers balance referential clarity with conversational norms, including maintaining engagement with the addressee. The principle is not "always shift gaze when pointing" but "gaze strengthens reference, and its absence or brevity can weaken it."

During role shift, gaze behavior changes. The signer's gaze represents the character's gaze, not the signer's own referential pointing. If the character is looking at another character (established at a spatial locus), the signer's gaze goes to that locus while the body is shifted into the first character's perspective. The arm positioning for any signs during role shift must account for both the shifted perspective and the gaze direction.

Sightlines and Facial Visibility

Arm positioning is not only about where the arms go; it is also about ensuring the arms do not obstruct the grammatically essential face.

Non-manual markers on the face carry critical grammatical information. If the hands or arms block the viewer's sightline to the face, that information is lost. Advanced signers develop awareness of sightlines, positioning their arms to remain visible while keeping the face clear.

Problematic configurations include: two-handed signs produced at face level where the hands obscure the mouth, elevated signs where the arms cross in front of the eyes, and large proximal movements where the forearms sweep across the face during transitions.

The solution is not to avoid face-level signing, which is phonologically required for many signs, but to position the arms so they frame rather than obscure the face. Hands at face level can be positioned to the sides of the face rather than directly in front of it. Elevated signs can involve elbow positioning that keeps the forearms from crossing the eye region.

Camera-mediated signing exacerbates sightline concerns. On video, the frame is often tight on the face, and arms moving into frame can obscure proportionally more of the visible area. Signers on video must be especially conscious of sightlines, sometimes adapting their arm positioning to the camera's perspective.

Practicing with video feedback helps develop sightline awareness. Recording and reviewing signing, specifically attending to moments when the face is obscured, reveals patterns that can be corrected.

Role Shift Integration

Role shift involves body orientation change. When the body shifts, arms must reorient to maintain consistent spatial reference. The arm reaches toward correct absolute locations regardless of current body orientation.

The coordination of body shift, gaze direction, and arm positioning during role shift is among the most complex aspects of ASL discourse. The signer must track: their own shifted orientation, the character's perspective being enacted, the locations of other characters in absolute signing space, and the need to maintain sightlines for the viewer.

Errors in role shift often involve arm positioning that follows body-relative rather than space-absolute reference. The remedy is practicing role shift with explicit attention to where arms point in absolute space, regardless of body orientation.

Prosodic Phrasing

Non-manual markers interact with prosodic phrasing: holds, retractions, and head nods at clause boundaries. The arm's movement quality, including pauses and transitions, coordinates with these prosodic patterns.

At clause boundaries, the arm may hold briefly, pause in its transition to the next sign, or show a slight retraction before the next phrase begins. These arm prosodics coordinate with head nods, blinks, and other non-manual boundary markers.

Developing awareness of prosodic coordination involves attending to fluent signing with focus on the pauses and transitions rather than the content. Where do arms pause? Where do they transition smoothly? How do these patterns align with facial and head prosodics?

Conclusion

Arm positioning coordinates with non-manual markers through timing, scope, and gaze integration. Non-manual markers spread over constituents, and arm positioning should maintain appropriate orientation through that scope. Eye gaze connects arm position to referential meaning; the two must align for clear spatial reference.

Arms must also avoid obstructing the face. Sightline awareness ensures that grammatical information on the face remains visible to the viewer. Developing this awareness requires attention to both what the arms are doing and what they are not blocking.

CHAPTER TEN

Biomechanics, Endurance, and Signing Health

Signing is physical work. The arms move through space, often for extended periods. Professional signers (including Deaf professionals, interpreters, and educators) may sign for hours daily. Understanding biomechanics and preventing signing-related injuries is essential for anyone who signs regularly.

This chapter is informational, not medical advice. Persistent pain or dysfunction warrants professional evaluation.

Muscular Demands

Different arm positions require different muscular engagement. Neutral position requires sustained engagement of shoulder stabilizers, elbow flexors, and forearm muscles. Elevated positions increase deltoid and rotator cuff demands. Extended positions increase anterior deltoid, pectoralis, and triceps demands.

Holding positions (isometric contraction) is often more fatiguing than moving, because sustained contraction reduces blood flow to engaged muscles.

Repetitive Strain Injuries

Repetitive strain injuries result from repeated movements that, over time, damage muscles, tendons, or nerves. Signing involves highly repetitive arm movements, and RSIs are recognized occupational hazards for professional signers.

Common signing-related conditions include carpal tunnel syndrome (median nerve compression at the wrist), cubital tunnel syndrome (ulnar nerve compression at the elbow), thoracic outlet syndrome (compression between collarbone and first rib), and rotator cuff injuries.

Risk factors include sustained holds (buoys), high repetition during interpreting, and camera-frame compression causing elevated shoulders in video communication.

Ergonomic Principles

Maintain neutral positioning when possible. Alternate between proximal and distal articulation. Take breaks during extended signing. Warm up before extended sessions. Attend to early warning signs (pain, numbness, tingling, weakness). Maintain overall physical fitness.

Signing Under Constraints

When space is constrained (video frames, cramped rooms), signers compress their signing space. When one arm is unavailable, signers adapt two-handed signs. When range of motion is limited, signers produce signs within available range.

These adaptations demonstrate that ASL is robust under constraints while showing which aspects of arm positioning are essential versus flexible.

Camera Perspective and 2D Projection

Video communication introduces specific constraints that deserve attention in any discussion of signing biomechanics and health.

Cameras project three-dimensional signing space onto a two-dimensional frame. This projection distorts spatial information, particularly along the near-far axis. Forward extension, which in person clearly moves toward the viewer, appears on video as the hand growing larger without clear forward motion. Backward movement appears as the hand shrinking. The depth cues that make spatial reference readable in person are flattened.

Signers adapt to this distortion through several strategies. Some add diagonal movement: instead of pure forward extension, they combine forward with upward or lateral movement, creating visible displacement in the 2D frame. Some rely more heavily on non-manual markers to indicate spatial reference that the camera cannot capture. Some accept that certain spatial distinctions will be less clear and compensate through lexical or discourse clarity.

Camera framing creates ergonomic challenges. Tight frames on the face require signers to keep their signing within a narrow visible area. To stay in frame while signing, some signers unconsciously elevate their shoulders, holding the upper body tense to keep the hands visible. This elevated tension, sustained over long video calls or recordings, contributes to shoulder and neck fatigue.

The remedy involves conscious attention to shoulder position during video signing. Lowering the camera (so the signer looks slightly down at it rather than straight ahead) may increase the visible signing area without requiring shoulder elevation, depending on lens and field of view. Taking breaks during extended video sessions to drop the shoulders and relax the upper body prevents cumulative

tension. Accepting that some signs will extend outside the frame, rather than contorting to keep everything visible, reduces strain.

For interpreters and others who sign extensively on video, developing a sustainable video signing posture is a health concern distinct from in-person signing ergonomics.

Conclusion

Signing is an embodied practice governed by physical laws. While linguistic rules determine where the arm should go, biomechanical constraints determine how it gets there and how long it can stay. Understanding the muscular demands of different configurations, particularly sustained holds and elevated positioning, is essential for longevity.

Technology introduces new constraints, flattening the near-far dimension and imposing frame limits that can lead to ergonomic strain. By applying the principles of neutral positioning, proximal/distal variation, and rest, signers can maintain their physical health across years of signing.

The next chapter shifts focus from the physical body to the learning mind, examining how arm positioning is acquired by children and adult learners.

CHAPTER ELEVEN

Acquisition and Pedagogy of Arm Positioning

Arm positioning is acquired through exposure and practice, whether by children learning ASL as a first language or adults learning it later.

First Language Acquisition

Children exposed to ASL from birth acquire arm positioning gradually. Infant signing shows reduced signing space. Early childhood shows expansion and increasing consistency. Later childhood shows refinement including register variation.

Arm positioning is integrated with linguistic development, not a separate motor skill.

Adult Second Language Challenges

Common challenges include: constrained signing space (arms held close), inconsistent spatial reference (locations drifting), register-invariant production (same size regardless of context), and coordination difficulties (symmetry breakdown, buoy instability).

Pedagogical Approaches

Effective approaches include: explicit attention to space, mirror practice, video feedback, physical guidance (with consent), contrastive drills (same sign at different sizes), spatial reference exercises, and register practice.

Assessment

Assessment should focus on comprehensibility within native variation range, not exact match to any single model. Self-assessment using video review against explicit criteria develops awareness.

Conclusion

Arm positioning is not a single skill but a complex integration of motor control, spatial cognition, and sociolinguistic awareness. While L1 acquisition proceeds naturally alongside motor development, L2 learners benefit from explicit pedagogical attention to space, register, and relaxation.

Assessment of these skills should prioritize comprehensibility and native-like variation over rigid adherence to citation forms. The final chapter examines the future of these forms, looking at variation, change, and the evolution of signing space.

CHAPTER TWELVE

Variation, Change, and the Future of Signing Space

ASL varies across communities, changes over time, and adapts to new technologies. Arm positioning is not fixed but shows variation by region, generation, community, and medium.

Regional and Generational Variation

Different communities maintain somewhat different signing space conventions. Older signers, particularly those from residential school backgrounds, often maintain larger signing spaces. Younger signers educated in mainstream settings may use more compact signing.

These variations reflect different communicative environments: distance signing across large spaces versus intimate signing with interpreters or small groups.

Black ASL

Research by Carolyn McCaskill and colleagues documents distinctive features of Black ASL, including larger signing spaces and more frequent two-handed variants. These features reflect the historical development of BASL in segregated residential schools.

BASL variation reminds us that "standard" descriptions represent one variety, not universal norms.

Video Communication

Video frames constrain signing space. Signers often compress laterally and may elevate shoulders to fit the frame. Forward extension (depth) is flattened by camera perspective.

Advanced signers compensate through diagonal trajectories, increased reliance on non-manual markers, and accepting some reduction in spatial clarity.

Whether video-adapted signing will influence face-to-face norms remains an open question as video communication becomes increasingly prevalent.

The Documentation Imperative

As signing practices change, documentation of existing variation becomes important. Video archives preserving diverse signing styles serve historical and practical purposes.

Teaching Awareness

Learners should develop awareness of variation and flexibility to adjust production and comprehension to different norms. Exposure to diverse signing models builds this perceptual flexibility.

Afterword

The arm in ASL is not merely a delivery mechanism for handshapes. It is itself an articulator, a meaning-bearing component of the language that positions signs in space, traces movement paths, represents referents, and modulates meaning through configuration and movement quality.

This text has examined arm angles from anatomical, spatial, phonological, grammatical, expressive, biomechanical, developmental, and sociolinguistic perspectives. The practical goal is developing conscious control over arm positioning. The scholarly goal is continued attention to arm positioning as a parameter deserving systematic study.

The communities who use ASL carry forward a language of remarkable expressive power that exploits the full spatial affordances of visual-gestural modality. The arm, reaching through that space, is central to what makes signed language what it is.

SUPPLEMENTARY MATERIALS

GLOSSARY OF TERMS

Abduction. Movement of a limb away from the body's midline. In the shoulder, abduction raises the arm to the side.

Adduction. Movement of a limb toward the body's midline.

Articulator. Any body part involved in producing a sign.

Articulatory phonetics. The study of how speech sounds (or, by extension, sign components) are physically produced by the body.

Aspect. The grammatical category concerning internal temporal structure of events: duration, completion, repetition, habituality.

Asymmetrical sign. A two-handed sign in which the hands have different roles.

Base hand. In asymmetrical signs, the hand providing a stationary reference point.

Battison's constraints. Two phonological constraints on two-handed signs: the Symmetry Condition and the Dominance Condition.

Black ASL (BASL). A variety of ASL with distinctive features developed in African American Deaf communities, including larger signing spaces and more frequent two-handed variants.

Buoy. A sign or handshape held by the non-dominant hand while the dominant hand continues signing.

Carpal tunnel syndrome. Compression of the median nerve at the wrist, causing numbness and weakness.

Citation form. The careful, neutral production of a sign as taught or appearing in dictionaries.

Classifier predicate. A construction using handshapes to represent entity categories, with movement representing action or spatial relationship. Also called depicting construction or depicting verb.

Coarticulation. The phenomenon whereby adjacent signs influence each other's production, resulting in overlapping articulations and anticipatory positioning.

Constructed action. A discourse technique in which the signer enacts a referent's actions from that referent's perspective; also called role shift or character role.

Cubital tunnel syndrome. Compression of the ulnar nerve at the elbow.

Depicting verb. Alternative term for classifier predicate, preferred by some researchers.

Directional verb. A verb whose movement indicates subject and object. Also called indicating verb or agreement verb.

Discourse-modified placement. Producing a sign at a location other than its lexical specification for discourse purposes.

Distal articulation. Sign production originating from joints farther from body center: wrist and fingers.

Dominance Condition. Battison's constraint: if hands have different handshapes, the non-dominant hand uses an unmarked handshape and typically remains stationary.

Elbow. The hinge joint connecting upper arm to forearm.

Extension. Straightening a joint or moving a limb backward/away.

Fingerspelling. Representing words through letter handshapes.

Flexion. Bending a joint or moving a limb forward/upward.

Foreshortening. In visual arts and video, the apparent shortening of depth-axis distances when viewed from certain angles; relevant to 2D camera projection of signing.

Glenohumeral joint. The ball-and-socket joint of the shoulder.

Gloss. Written representation of a sign using a word in capitals. Glosses are labels, not translations.

Ground. In classifier constructions, the stable reference surface (often provided by non-dominant arm) against which the figure moves.

Handling classifier. A classifier showing how an entity is held or manipulated.

Iconic. Resembling the referent in form.

Indexing. Pointing to establish or reference a spatial location.

Isometric contraction. Muscular engagement that holds position without movement.

Kinesthetic. Relating to the sense of body position and movement; closely related to proprioception.

Lateral timeline. A timeline oriented left-to-right rather than front-to-back.

Lexical location. The location where a sign is produced as part of its phonological specification.

Lexical time marker. A sign explicitly indicating time: YESTERDAY, TOMORROW, LAST-WEEK, etc.

Locus (plural: loci). A point in signing space associated with a referent for purposes of spatial grammar.

Morpheme. The smallest meaningful unit of language; in ASL, includes handshape morphemes, movement morphemes, and spatial morphemes.

Near-far dimension. The spatial dimension toward and away from the body; often associated with temporal reference.

Neutral position. The resting arm configuration for signing: upper arm hanging naturally, elbow flexed to approximately ninety degrees, forearm in a semi-pronated state (palms facing each other or angled slightly downward), wrist relaxed. This signing-neutral differs from anatomical neutral (thumbs-up position).

Neutral signing space. The unmarked volume in front of the signer where most conversational signing occurs.

Non-manual markers (NMM). Facial expression, eye gaze, head movement, or body posture that conveys grammatical or affective information in signed languages. Also called non-manual signals (NMS).

Phoneme. The smallest contrastive unit of language; in ASL, includes contrastive handshapes, locations, movements, and orientations.

Phonological parameter. A contrastive element distinguishing signs: handshape, location, movement, palm orientation, non-manual markers.

Platform signing. Signing in public presentation contexts.

Pronation. Forearm rotation turning the palm downward.

Proprioception. The body's sense of its own position without visual confirmation.

Prosody. The rhythm, timing, and intonation patterns of language; in ASL, includes holds, pauses, movement dynamics, and non-manual features.

Proximal articulation. Sign production originating from joints closer to body center: shoulder and elbow.

Reduplication. Repetition of all or part of a sign, often with morphological function (indicating aspect, plurality, or intensity).

Register. A variety of language appropriate to particular social contexts, including formal, casual, intimate, and frozen registers.

Repetitive strain injury (RSI). Injury from repeated movements.

Role shift. Taking on a character's perspective; also called constructed action.

Rotator cuff. Muscles and tendons surrounding the shoulder joint.

SASS (Size and shape specifier). Construction using hands and arms to indicate object dimensions.

Scapula. The shoulder blade.

Shoulder complex. The combined structure of glenohumeral joint, scapula, and clavicle.

Signing space. The three-dimensional volume within which signs are produced.

Spatial grammar. The system using locations in signing space to represent referents and encode relationships.

Spatial timeline. An explicit representation of time mapped onto signing space.

Stokoe notation. A transcription system for sign languages developed by William Stokoe, using symbols for handshape, location, and movement.

Supination. Forearm rotation turning the palm upward.

Symmetrical sign. A two-handed sign where both hands share handshape, location, and movement.

Symmetry Condition. Battison's constraint: if both hands move, they must share handshape, location, and movement (identical or mirror-image).

Target undershoot. In fast signing, hands not reaching canonical locations.

Thoracic outlet syndrome. Compression of nerves or blood vessels between collarbone and first rib.

Topic-comment structure. Discourse structure establishing a topic, then commenting on it.

Weak drop. In casual register, the non-dominant hand dropping out of two-handed symmetrical signs.

APPENDIX A: NOTATION GUIDE

This appendix provides a reference for transcription conventions used in this text. These conventions are specific to this book and designed for pedagogical clarity. They are not standard linguistic transcription conventions.

Standard Glossing Conventions

Signs are represented by English glosses in capitals:

MOTHER, UNDERSTAND, GIVE, BOOK, THINK

Glosses are labels, not translations.

Compound signs use hyphens: LOOK-AT, PICK-UP

Fingerspelling uses hyphens between letters: J-O-H-N

Lexicalized fingerspelled signs use a pound sign: #JOB, #EARLY

Spatial Indexing

Locations are marked with bracketed letters:

JOHN[a] (JOHN established at location a) MARY[b] (MARY established at location b) IX[a] (index pointing toward location a)

Indicating verbs show movement using angle brackets within brackets:

GIVE[1>a] (first person gives to location a) TELL[a>b] (referent at a tells referent at b) ASK[b>1] (referent at b asks first person)

Bracket Parsing Rule

This text uses brackets for both spatial reference and articulatory description. To distinguish them:

Brackets containing letters, numbers, or arrows indicate spatial reference: - [a], [b], [1], [1>a], [a>b]

Brackets containing words indicate articulatory description: - [PROX+], [HIGH], [FORWARD+], [SLOW]

When both types appear, spatial reference comes first:

GIVE[a>b, PROX+] (give from a to b with proximal involvement) IX[a, HIGH] (index toward location a, elevated)

Multiple articulatory descriptors can be combined:

GIVE[a>b, PROX++, FORWARD+] (give from a to b with strong proximal involvement and forward extension)

When multiple values occur in one bracket, separate them with commas. Spacing after commas is optional but should be kept consistent throughout a document. Avoid nesting brackets; use one bracket list per sign token.

Arm Positioning Notation

Each descriptor type marks a distinct feature.

Proximal involvement uses PROX: - POINT[PROX+] (notable shoulder engagement) - GIVE[PROX++] (strong proximal involvement)

Height modification uses HIGH or LOW: - UNDERSTAND[HIGH] (above typical location) - WALK[LOW] (below neutral space)

Near-far positioning uses FORWARD, TOWARD-BODY, or BEHIND: - PLAN[FORWARD+] (forward extension into space) - FUTURE[FORWARD++] (strong forward extension, often used to suggest distant future or emphatic futurity; optional and context-dependent) - THINK[TOWARD-BODY] (retracted toward torso) - PAST[BEHIND] (over-shoulder or behind-head space)

Like PROX, FORWARD can be graded: FORWARD+ indicates moderate forward extension, FORWARD++ indicates strong or emphatic forward extension.

The distinction between TOWARD-BODY (retraction toward the torso) and BEHIND (placement in the space behind the signer) matters because these are distinct in ASL discourse. Many "past" references involve TOWARD-BODY rather than true BEHIND placement.

Movement quality uses descriptive terms: - WALK[SLOW], THROW[FORCEFUL], PLACE[CAREFUL]

Non-Manual Marker Notation

Non-manual markers are indicated with labeled lines above affected portions:

```
        ___q
ARE-YOU TIRED
```

(raised eyebrows for yes/no question)

```
        ___wh
WHO ARRIVE
```

(furrowed brows for WH-question)

```
    ___t
JOHN, HE LEAVE
```

(raised eyebrows for topic)

The line indicates scope: the marker extends over all signs under the line.

Note for layout: These examples must be rendered in a monospaced font to preserve alignment between the scope line and the signs it modifies.

Role Shift Notation

Role shift indicates body orientation:

RS[JOHN, facing right]: "..." (shifted into JOHN's perspective)

Important Reminders

These notations are pedagogical tools for this book only. They are not standard in ASL linguistics research.

Glosses are labels, not translations. English word order in glosses does not represent ASL word order.

When observing actual signing, expect variation from any notation system.

APPENDIX B: PRACTICAL EXERCISES

The following exercises develop awareness and control of arm positioning. They are organized by chapter and designed for self-study with video recording or partner feedback.

Chapter One Exercises

Exercise 1.1: Joint Isolation

Stand before a mirror in neutral signing position. Move only your shoulder (keeping elbow and wrist fixed): flex, extend, abduct, adduct, rotate. Return to neutral. Move only your elbow: flex and extend. Return to neutral. Move only your wrist. Then combine movements deliberately. Notice how joints work together and which movements feel natural versus strained.

Exercise 1.2: Proprioceptive Calibration

Close your eyes. Place your arm at approximately 90 degrees elbow flexion. Open your eyes and check. Close eyes, place arm at approximately 45 degrees. Check. Practice estimating specific configurations without visual confirmation. Develop trust in kinesthetic sense.

Exercise 1.3: Primary Articulator Identification

Select ten familiar signs. For each, identify whether movement originates primarily from shoulder, elbow, wrist, or fingers. Classify each as primarily proximal or distal. Compare analysis with a partner or instructor.

Chapter Two Exercises

Exercise 2.1: Lexical Time Sign Analysis

Produce TOMORROW, FUTURE, LATER, NEXT-WEEK. Notice forward movement in each. Produce YESTERDAY, PAST, BEFORE, LAST-YEAR. Notice backward movement. Identify the consistent directional pattern.

Exercise 2.2: Timeline Establishment

Extend non-dominant arm horizontally as a timeline. With dominant hand, place events at different points: shoulder area for past, mid-forearm for present, fingertips for future. Practice maintaining the timeline arm while signing about events with dominant hand.

Exercise 2.3: Gradient Extension

Produce FUTURE with minimal forward extension (near future), moderate extension (moderate future), and full extension (distant future). Feel the difference. Recognize that this is a gradient resource, not a precise calibration system. This exercise develops awareness of a possible iconic strategy; using spatial extension for temporal reference is not required for grammatical future reference, which is primarily established through lexical time markers.

Chapter Three Exercises

Exercise 3.1: Lexical versus Modified Height

List five signs with lexically specified elevated locations (like THINK at forehead). List five with neutral locations. Practice distinguishing: when you see elevated signing, is it lexical location or discourse modification?

Exercise 3.2: Hierarchical Establishment

Describe a three-level hierarchy (CEO, manager, employee). Establish each at a distinct height. Produce sentences describing interactions, with verbs moving between height levels appropriately.

Exercise 3.3: Emphatic Elevation

Take a sign normally produced at chest height. Produce it at neutral height, then moderately elevated for mild emphasis, then strongly elevated for strong emphasis. Notice arm adjustment required.

Chapter Four Exercises

Exercise 4.1: Spatial Consistency

Establish two referents at distinct locations. Tell a two-minute story involving both. Record yourself. Review: did locations remain stable or drift? If drift occurred, practice maintaining consistency.

Exercise 4.2: Verb Agreement Accuracy

Establish TEACHER[a] and STUDENT[b]. Produce: TELL[a>b], ASK[b>a], GIVE[a>b], SHOW[b>a]. Verify that movement trajectories clearly connect established locations.

Exercise 4.3: Role Shift Orientation

Establish two characters at distinct locations. Shift into each character's perspective, maintaining correct orientation toward the other character's absolute location. Practice smooth transitions while preserving spatial consistency.

Chapter Five Exercises

Exercise 5.1: Proximal/Distal Scaling

Select a familiar sign. Produce it with minimal proximal involvement (maximally distal), at citation form, with moderate proximal involvement, and with maximal proximal involvement. Feel and observe the differences.

Exercise 5.2: Register Contrast

Prepare a brief self-introduction. Sign it as if in casual conversation with a friend. Then sign it as if in a formal presentation. Notice specific differences in signing space size and shoulder involvement.

Exercise 5.3: Observing Variation

Watch signing from multiple sources (different ages, backgrounds, regions). Note differences in signing space and proximal involvement. Recognize the range of native variation.

Chapter Six Exercises

Exercise 6.1: Arm as Representation

Describe a snake using classifier for head and forearm for body. Describe a road using non-dominant arm, with vehicle classifier traveling on it. Practice using arm as part of representation.

Exercise 6.2: Ground Stability

Establish non-dominant arm as a surface (table, road, ground). Move a classifier on dominant hand relative to that surface. Practice keeping the ground arm stable throughout.

Exercise 6.3: Manner Through Movement

Using a person classifier, show: walking normally, walking slowly, walking quickly, walking tiredly. Convey manner through arm movement quality without lexical additions.

Chapter Seven Exercises

Exercise 7.1: Symmetry Practice

Select symmetrical two-handed signs. Produce each while watching in a mirror. Verify both arms contribute equally. If asymmetry appears, consciously increase non-dominant contribution.

Exercise 7.2: Asymmetrical Independence

Select asymmetrical two-handed signs. Practice holding base hand completely steady while dominant hand moves. Focus specifically on base hand stability.

Exercise 7.3: Buoy Maintenance

Establish a list buoy (fingers extended on non-dominant hand). With dominant hand, produce several signs while maintaining the buoy. Practice increasing duration of buoy maintenance.

Chapter Eight Exercises

Exercise 8.1: Elbow Angle Awareness

Without looking, place arm at specific elbow angles: 45 degrees, 90 degrees, 135 degrees, full extension. Check accuracy. Develop proprioceptive calibration for elbow angle.

Exercise 8.2: Arc Production

With shoulder fixed, flex and extend elbow to trace an arc with your hand. With elbow fixed, move from shoulder. Combine both. Identify signs using each type of movement path.

Exercise 8.3: Extension and Affect

Produce a statement with neutral elbow extension, then with full extension (emphatic), then with minimal extension (tentative). Notice different impressions conveyed.

Exercise 8.4: Elbow Locking Check

During fingerspelling practice, pause periodically and assess your elbow. Is it locked rigidly or floating relaxed? If locked, consciously release the tension, shake out the arm, and resume with a more relaxed elbow. Develop awareness of when locking occurs.

Exercise 8.5: Transition Observation

Watch fluent ASL video with attention specifically to elbow movement during transitions between signs. Notice how the elbow adjusts anticipatorily, preparing for the next sign before the current sign completes. Try to identify the "economizing" function: small elbow adjustments that prevent full shoulder repositioning.

Chapter Nine Exercises

Exercise 9.1: Question Coordination

Produce yes/no questions with raised eyebrows and appropriate arm positioning. Produce WH-questions with furrowed brows. Verify timing: non-manual markers should coincide with relevant content.

Exercise 9.2: Topic-Comment Boundaries

Produce topic-comment structures with clear boundary marking: raised eyebrows over topic, pause, different marking over comment. Notice arm repositioning at boundaries.

Exercise 9.3: Role Shift with Non-Manuals

Practice role shift with full non-manual involvement: body orientation, eye gaze, facial expression appropriate to character. Maintain arm orientation consistency through shifts.

Exercise 9.4: Gaze-Arm Coordination

Establish two referents at distinct locations. Practice pointing to each while shifting eye gaze to the pointed location. Then practice the common error: pointing without gaze shift. Notice how, from a viewer's perspective, the reference appears less clearly anchored without gaze coordination. Develop the habit of coordinating gaze with arm positioning.

Exercise 9.5: Sightline Check

Record yourself signing content that includes face-level signs and elevated signs. Review the recording with attention to moments when your arms or hands obscure your face. Identify patterns and practice adjustments that keep the face visible.

Chapter Ten Exercises

Exercise 10.1: Fatigue Awareness

Sign continuously for five minutes. Notice which muscles tire: shoulders, upper arms, forearms, wrists. Identify positions or movements causing most fatigue.

Exercise 10.2: Ergonomic Self-Check

Record yourself signing. Review for: shoulder tension, signing space comfort, movement smoothness, returns to neutral. Identify habits that might contribute to strain.

Exercise 10.3: Warm-Up Development

Create a five-minute warm-up routine including shoulder, elbow, wrist, and finger movements. Practice before extended signing sessions.

Chapter Eleven Exercises

Exercise 11.1: Video Self-Review

Record yourself signing for two to three minutes. Review with attention to: signing space size, spatial reference consistency, proximal/distal variation, two-handed coordination. Identify patterns and improvement areas.

Exercise 11.2: Model Analysis

Watch fluent ASL video content. Focus specifically on arm positioning. Note signing space size, register variation, spatial reference maintenance.

Exercise 11.3: Teaching Articulation

Choose one concept from this text. Prepare a brief explanation suitable for an intermediate learner. Practice explaining clearly with demonstration.

Chapter Twelve Exercises

Exercise 12.1: Variation Observation

Watch signing from signers of different ages and backgrounds. Note differences in signing space conventions. Reflect on factors accounting for variation.

Exercise 12.2: Video Frame Adaptation

Set up a video frame (phone camera, video call). Sign with normal signing space. Review: does signing fit the frame? Practice adapting to frame constraints while maintaining clarity.

APPENDIX C: SELF-ASSESSMENT CHECKLISTS

Use these checklists periodically to evaluate arm positioning skills. Video self-review enhances accuracy.

Signing Space Checklist

- [ ] My signing space extends appropriately for my body and context (approximately waist to forehead, shoulder width, comfortable forward reach)
- [ ] I can expand or contract my signing space as context requires
- [ ] My signing space adjusts for register (larger for formal, smaller for casual)
- [ ] I distinguish between lexical locations and discourse-modified placements

Spatial Reference Checklist

- [ ] When I establish referents, locations are clear and distinct
- [ ] Established locations remain stable through discourse (no drift)
- [ ] Subsequent references match original establishment angles
- [ ] My indicating verbs move clearly between established locations
- [ ] Spatial reference remains consistent during role shift

Proximal/Distal Checklist

- [ ] I engage my shoulder when signs or contexts require it
- [ ] I can produce signs with deliberate proximal enlargement
- [ ] I can produce signs with casual distal compression
- [ ] My proximal/distal involvement varies appropriately by context

Two-Handed Coordination Checklist

- [ ] In symmetrical signs, both arms contribute equally
- [ ] In asymmetrical signs, my base hand remains steady
- [ ] I can maintain buoys for appropriate durations
- [ ] I recognize and can produce weak drop variants appropriately

Non-Manual Integration Checklist

- [ ] My arm positioning coordinates with question marking

- [ ] My arm positioning coordinates with topic-comment structure
- [ ] Arm positioning and non-manual markers align temporally
- [ ] During role shift, arm orientation adjusts for changed perspective

Health Awareness Checklist

- [ ] My shoulders are relaxed while signing
- [ ] My movements are smooth, not tense
- [ ] I notice fatigue and take appropriate breaks
- [ ] I warm up before extended signing sessions
- [ ] I have no persistent pain, numbness, or tingling

APPENDIX D: FURTHER RESOURCES

Recommended Readings

Brentari, Diane. *A Prosodic Model of Sign Language Phonology.* MIT Press, 1998.

Emmorey, Karen. *Language, Cognition, and the Brain: Insights from Sign Language Research.* Lawrence Erlbaum, 2002.

Liddell, Scott K. *Grammar, Gesture, and Meaning in American Sign Language.* Cambridge University Press, 2003.

McCaskill, Carolyn, Ceil Lucas, Robert Bayley, and Joseph Hill. *The Hidden Treasure of Black ASL*. Gallaudet University Press, 2011.

Sandler, Wendy, and Diane Lillo-Martin. *Sign Language and Linguistic Universals.* Cambridge University Press, 2006.

Valli, Clayton, et al. *Linguistics of American Sign Language.* 5th ed. Gallaudet University Press, 2011.

Video Resources

For observing variation in signing, seek content from Deaf community vlogs, ASL storytelling archives, interpreted events, academic presentations by Deaf scholars, and intergenerational recordings showing age-related variation.

Professional Organizations

Registry of Interpreters for the Deaf (RID) National Association of the Deaf (NAD) American Sign Language Teachers Association (ASLTA)

Continuing Development

Seek regular interaction with diverse fluent signers. Practice with video recording and self-review. Attend Deaf community events. Study with multiple instructors to experience variation. For interpreters, seek mentorship on platform signing and ergonomics.

APPENDIX E: ASSESSMENT RUBRICS AND FORMS

Performance Assessment Rubric

Use this rubric for evaluating video-recorded performances. Each category is scored from 1 (emerging) to 4 (proficient).

Category 1: Signing Space
Evaluates use of space for clarity and discourse purposes.

4 - Proficient: Signing space is appropriately sized for context/register. Full space is used when content warrants. Space adjusts naturally between formal and casual content.

3 - Developing: Signing space is generally appropriate. Some underuse or overuse relative to context. Register adjustment present but inconsistent.

2 - Emerging: Signing space is noticeably restricted or inappropriate for context. Limited register variation in space usage.

1 - Beginning: Signing space significantly constrained (T-Rex arms) or inappropriately large. No apparent register adjustment.

Category 2: Spatial Reference
Evaluates establishment, maintenance, and use of loci for referent tracking.

4 - Proficient: Referents established at clear, distinct locations. Locations maintained consistently throughout discourse. Indicating verbs connect established locations accurately. No drift.

3 - Developing: Referents established clearly. Occasional drift or inconsistency in maintenance. Indicating verbs generally accurate.

2 - Emerging: Referent establishment unclear or inconsistent. Noticeable drift. Indicating verb trajectories sometimes miss established locations.

1 - Beginning: Minimal or no spatial reference establishment. Significant drift. Indicating verbs do not connect to established locations.

Category 3: Non-Manual Coordination
Evaluates timing, scope, and gaze integration with arm positioning.

4 - Proficient: Non-manual markers coordinate accurately with manual content. Scope extends appropriately over constituents. Eye gaze coordinates with spatial reference.

3 - Developing: Non-manual markers present and generally timed correctly. Some scope or timing errors. Gaze coordination present but inconsistent.

2 - Emerging: Non-manual markers present but frequently mistimed. Scope too narrow or too wide. Limited gaze coordination.

1 - Beginning: Non-manual markers absent, minimal, or misaligned. No apparent gaze coordination with spatial reference.

Category 4: Register Appropriateness
Evaluates contextual scaling choices, including shifts within discourse.

4 - Proficient: Proximal/distal involvement matches intended register. Smooth scaling between formal and casual as content requires, including appropriate shifts when the discourse shifts (e.g., quoted dialogue versus narration, rhetorical emphasis versus neutral exposition). Register choices feel natural.

3 - Developing: Register generally appropriate. Some mismatches between content and proximal/distal involvement. Scaling present but effortful.

2 - Emerging: Register inconsistent or inappropriate for context. Limited ability to scale between formal and casual.

1 - Beginning: Register-invariant production. No apparent adjustment for context.

Category 5: Physical Fluency
Evaluates movement quality, transitions, and biomechanical ease.

4 - Proficient: Movement is smooth and continuous. Transitions are anticipatory. No elbow locking. Sightlines maintained. Appears effortless.

3 - Developing: Generally smooth with occasional choppiness. Transitions mostly smooth. Minor locking or sightline issues.

2 - Emerging: Noticeably choppy or mechanical. Over-return to neutral. Some locking. Occasional facial obstruction.

1 - Beginning: Signing appears stiff, mechanical, or labored. Significant locking. Frequent over-return to neutral. Regular facial obstruction.

Peer Feedback Form

Observer: _____ **Date:** _____

Signer: _____ **Recording:** _____

Instructions: Watch the recording once for overall impression, then again focusing on each category. Provide specific, observation-based feedback.

Overall Impression:

What is the general quality of arm positioning in this sample?

_____

_____

Signing Space:

Is the space appropriately sized? Does it adjust for register?

Observation: _____

Suggestion: _____

Spatial Reference:

Are referents clearly established? Do locations remain stable?

Observation: _____

Suggestion: _____

Non-Manual Coordination:

Do NMMs align with arm positioning? Is gaze coordinated with reference?

Observation: _____

Suggestion: _____

Physical Fluency:

Is movement smooth? Any locking, choppiness, or facial obstruction?

Observation: _____

Suggestion: _____

One Strength:

_____

One Priority for Development:

Self-Reflection Prompt Template

Use after reviewing your own recorded performance.

Recording Date: _____ **Content Type:** _____

Comparison to Previous Recording (if applicable):

What has improved since my last recording?

What challenges persist?

Signing Space:

How would I characterize my signing space in this recording?

Was it appropriate for the intended register/context? Why or why not?

Spatial Reference:

Did I establish referents clearly?

Did locations remain stable, or did I notice drift?

Most Successful Moment:

At what point in the recording did my arm positioning work best? What made it effective?

Most Challenging Moment:

At what point did I struggle most? What specifically went wrong?

Goal for Next Recording:

What specific aspect of arm positioning will I focus on improving?

How will I practice this before my next recording?

End of Supplementary Materials

INSTRUCTOR MATERIALS

PREFACE TO INSTRUCTOR MATERIALS

Purpose and Scope

The following materials are designed for ASL instructors, interpreter educators, and program directors who wish to use this text in coursework. They may also be useful for self-directed learners seeking structure for their independent study.

Teaching Without Video

The core text is intentionally non-video; it assumes advanced learners who can visualize described configurations. The instructor materials optionally use externally sourced signing samples where available. If you do not have access to appropriate video samples, the lesson plans remain effective through live demonstration, student practice, and peer observation.

When selecting external video content for classroom use, prioritize: - Content where the signer's upper body and arms are clearly visible - Diverse signers representing varied backgrounds and styles - Content appropriate to the register being discussed

Classroom Norms

Effective instruction in arm positioning requires a learning environment where students feel comfortable being observed, recorded, and given feedback. Establish norms early:

Consent and privacy. Clarify whether student recordings will be shared with the class, viewed only by the instructor, or kept by the student alone. Specify how long recordings are retained and how they may be used.

Respectful feedback. Model observation-based feedback that focuses on specific, changeable behaviors rather than global judgments. "I noticed your loci drifted during the second reference" is more useful than "Your spatial reference needs work."

Variation awareness. Reinforce throughout the course that variation is normal. When students observe differences among signers (including the instructor), frame these as data for analysis, not errors to correct.

Physical comfort. Some exercises involve sustained arm positioning that may cause fatigue. Remind students to stop if they experience sharp pain. Provide modifications for students with shoulder, elbow, or wrist limitations.

Deaf Guest Involvement

If Deaf community members participate as guest speakers, consultants, or feedback providers, their input takes priority. When a Deaf guest's feedback differs from the textbook's descriptions, treat the guest's perspective as primary for the community and context being discussed. This models the "framework not authority" stance of the core text.

Recording Requirements

The lesson plans and syllabi assume access to video recording capability (smartphones are sufficient). Four recordings form the core assessment portfolio:

1. **Baseline recording** (Lesson 1 / Week 1): Two-minute self-introduction for comparison
2. **Spatial reference recording** (Lesson 4 / Week 6): Story with two characters and dialogue
3. **Register contrast recording** (Lesson 5 / Week 8): Same content in formal and casual registers
4. **Final capstone recording** (Lesson 12 / Week 15): Integrated performance demonstrating all skills

These recordings connect to the rubrics in Appendix E. Recordings 1 through 3 may be scored formatively (for feedback and development); the final capstone is scored summatively across all rubric categories.

Accessibility Considerations

For mixed cohorts including hearing, Deaf, and hard-of-hearing students, ensure: - Captioning or interpreting access for any spoken instruction - Visual access to all demonstrations - Flexible recording options for students who cannot use standard video setups

Sample Recording Policy

Instructors may adapt the following policy statement for their syllabus:

Student video recordings are used for instructional feedback and skill development only. Students may opt out of whole-class viewing and instead submit videos privately to the instructor for individual feedback. All recordings are stored securely for the duration of the course plus [X weeks/one semester] and then deleted unless the student requests otherwise. Students retain ownership of their recordings and may request deletion at any time.

SAMPLE LESSON PLANS

These lesson plans assume a 75-minute class session with access to video recording equipment. Adjust timing and activities as needed for your context.

Lesson Plan 1: Introduction to Arm Positioning (Chapter One)

Learning Objectives: By the end of this session, students will be able to: - Identify the major joints of the signing arm and describe their movement capabilities - Define and demonstrate the neutral signing position - Distinguish between proximal and distal articulation - Recognize common learner errors (T-Rex arms, over-return to neutral)

Materials Needed: - Whiteboard or display for anatomical terms - Video recording devices (phones acceptable) - Mirror (optional but helpful)

Session Outline:

Opening (10 minutes): Begin with a brief demonstration. Sign a passage twice: once with exaggerated T-Rex arms (elbows pinned), once with fluid arm movement. Ask students to identify what differs. Do not yet provide terminology; let them articulate observations in their own words.

Anatomical Foundation (20 minutes): Introduce the joint chain: shoulder complex, elbow, radioulnar joints, wrist. For each joint, have students explore their own range of motion. Emphasize degrees of freedom at each level. Demonstrate how shoulder position constrains what positions are available to the hand.

Introduce the neutral position. Have students find their own neutral: relaxed shoulder, elbow at approximately ninety degrees, forearm semi-pronated. Practice departing from and returning to neutral.

Proximal versus Distal (15 minutes): Select a familiar sign (UNDERSTAND or THINK). Have students produce it three ways: maximally distal (wrist/fingers only, arm nearly still), citation form, and maximally proximal (full shoulder engagement). Discuss: When might each be appropriate?

Error Identification (15 minutes): Demonstrate T-Rex arms and over-return to neutral. Have students practice identifying these errors in partners. One student signs a brief passage deliberately incorporating one error; the partner identifies which error is present.

Recording and Review (10 minutes): Students record themselves signing a thirty-second self-introduction. Review immediately, attending specifically to arm positioning. Identify one strength and one area for development.

Closing (5 minutes): Assign reading: Chapter One in full. Preview next session: spatial dimensions and temporal reference.

Lesson Plan 2: The Near-Far Dimension and Temporal Reference (Chapter Two)

Learning Objectives: By the end of this session, students will be able to: - Identify lexical time signs and their directional properties - Demonstrate optional spatial timeline establishment - Recognize that spatial temporal mapping is a discourse resource, not obligatory grammar - Practice gradient arm extension for temporal distance

Materials Needed: - List of time signs for analysis - Video recording devices - Sample narrative with multiple time references

Session Outline:

Opening (10 minutes): Review: What is the neutral position? What distinguishes proximal from distal articulation? Brief partner check.

Lexical Time Sign Analysis (20 minutes): Present time signs: TOMORROW, FUTURE, YESTERDAY, PAST, NEXT-WEEK, LAST-YEAR. For each, students produce the sign and identify directional properties. Chart the pattern: forward associations, backward associations.

Discuss: Is this pattern a rule or a tendency? Introduce the concept of "discourse resource" versus "obligatory grammatical marking." Emphasize that lexical time markers do the primary temporal work.

Timeline Establishment (20 minutes): Demonstrate explicit timeline construction: non-dominant arm as scaffold, dominant hand placing events. Have students practice establishing timelines and placing three events at different points.

Discuss when timeline constructions are useful (complex narratives, planning discussions) versus when they are unnecessary (simple past reference with lexical marker).

Gradient Extension Practice (15 minutes): Exercise 2.3 from the text: Produce FUTURE with minimal, moderate, and full forward extension. Discuss: What impressions do different extensions create? Emphasize that this is iconic, gradient, and optional.

Narrative Practice (10 minutes): Students prepare a brief narrative involving past and future events. Record and review, attending to how time is established: lexically, spatially, or both.

Closing (5 minutes): Assign reading: Chapter Three. Preview: vertical space, hierarchy, and register.

Lesson Plan 3: Vertical Space and Hierarchical Positioning (Chapter Three)

Learning Objectives: By the end of this session, students will be able to: - Distinguish lexical height from discourse-modified height - Demonstrate iconic and metaphorical uses of vertical space - Practice emphatic elevation - Recognize register-linked vertical expansion and compression

Materials Needed: - List of signs with various lexical heights - Scenarios for role-play (formal presentation, casual conversation) - Video recording devices

Session Outline:

Opening (10 minutes): Quick review of time signs and spatial options. Transition: Today we examine the vertical dimension.

Lexical versus Modified Height (20 minutes): Present signs at different lexical heights: THINK (forehead), FEEL (chest), WANT (torso), WALK (low). Students produce each and note the lexical location.

Then present: What if you produce THINK at chest height? Is it still THINK? What if you produce WANT at shoulder height? Discuss: When is height modification meaningful versus simply incorrect?

Establish the principle: lexical locations are phonological; modifications for emphasis or discourse purposes are separate.

Iconic and Metaphorical Height (15 minutes): Demonstrate classifier predicates using vertical space iconically: bird flying high, snake on ground. Have students practice placing classifiers at different heights.

Discuss metaphorical height: status, importance, evaluation. Demonstrate establishing a CEO in high space, employees in lower space. Have students practice a brief hierarchical description.

Emphatic Elevation (15 minutes): Select a sign at neutral height. Practice emphatic elevation: moderate emphasis, strong emphasis. Discuss: How does this interact with facial expression and other intensity markers?

Register Practice (10 minutes): Role-play: Students sign the same content as if in a formal presentation (expanded vertical range) and as if in casual conversation (compressed range). Partners provide feedback on vertical range differences.

Closing (5 minutes): Assign reading: Chapter Four. Preview: horizontal space and referent tracking.

Lesson Plan 4: Spatial Reference and Verb Agreement (Chapter Four)

Learning Objectives: By the end of this session, students will be able to: - Establish referents at distinct locations with clear, consistent arm positioning - Produce indicating verbs with accurate trajectories between locations - Maintain spatial consistency through extended discourse - Recognize and correct drifting loci

Materials Needed: - Scenarios requiring multiple referents - Video recording devices - Checklist for spatial consistency assessment

Session Outline:

Opening (10 minutes): Review vertical and temporal dimensions. Today: the left-right dimension and spatial reference.

Establishing Referents (20 minutes): Demonstrate establishing two referents at distinct locations: for practice purposes, establish JOHN on the left and MARY on the right. Emphasize clear arm extension, deliberate placement, and the importance of returning to approximately the same location for subsequent reference. Note that in actual discourse, loci placement is a choice, not a rule.

Students practice with partners: establish two referents, produce several statements about each, and maintain consistency. Partners assess whether locations remain stable.

Verb Agreement (20 minutes): Introduce indicating verbs: GIVE, TELL, ASK, SHOW. Demonstrate that movement trajectory indicates subject and object.

With referents established, practice: TELL[a>b], ASK[b>a], GIVE[a>b], SHOW[b>a]. Students practice in pairs, checking that movement clearly connects established locations.

Drifting Loci (15 minutes): Demonstrate the drift error: begin with distinct locations, gradually let them slide toward center. Have students identify drift in sample signing.

Extended practice: Tell a two-minute story involving two characters. Record and review specifically for spatial consistency. Identify moments where drift occurred.

Multi-Referent Challenge (10 minutes): Add a third referent. Discuss strategies: vertical differentiation, re-establishment, allowing less important referents to fade. Practice briefly with three referents.

Closing (5 minutes): Assign reading: Chapter Five. Preview: register variation and proximal articulation.

Lesson Plan 5: Register Variation and Proximal Articulation (Chapter Five)

Learning Objectives: By the end of this session, students will be able to: - Demonstrate formal and casual register through arm positioning differences - Scale signing space appropriately for different contexts - Recognize dialectal and community variation in signing space norms - Understand Black ASL's distinctive use of signing space

Materials Needed: - Video samples from diverse signers (if available) - Scenarios for register practice - Discussion questions on variation

Session Outline:

Opening (10 minutes): Review spatial reference. Transition: How does the same spatial grammar look different across contexts?

Register Demonstration (15 minutes): Sign the same content in formal register (platform signing, expanded space, proximal involvement) and casual register (compressed space, distal concentration). Have students identify specific differences: signing space size, shoulder engagement, movement size.

Register Practice (20 minutes): Scenarios: Students prepare a brief message (self-introduction, explanation of a concept). First, present as if at a conference podium. Then present as if to a close friend in casual conversation. Record both and compare.

Discuss: What changed? What stayed constant? Is one "correct"? Establish that register appropriateness, not register uniformity, is the goal.

Variation Discussion (20 minutes): Discuss educational background variation: residential school versus mainstream. Discuss regional variation. Introduce Black ASL: larger signing spaces, more two-handed variants as community norms rather than emphasis markers.

Key point: The "standard" described in textbooks represents one variety. Encountering different signing space norms indicates legitimate variation, not error.

If video samples from diverse signers are available, view and discuss.

Self-Assessment (10 minutes): Students assess their own default signing space. Is it closer to expanded or compressed? Is it register-flexible or register-invariant? Identify one area for development.

Closing (5 minutes): Assign reading: Chapter Six. Preview: classifier predicates and the arm as representation.

Lesson Plan 6: Classifier Predicates and Arm Involvement (Chapter Six)

Learning Objectives: By the end of this session, students will be able to: - Use the arm as part of classifier representation (not just handshape carrier) - Maintain stable "ground" with the non-dominant arm - Convey manner through arm movement quality - Practice size and shape specifiers with appropriate arm extension

Materials Needed: - Objects or images for description practice - Video recording devices

Session Outline:

Opening (10 minutes): Review register variation. Transition: Today we examine classifier predicates with attention to what the arm contributes beyond carrying the handshape.

Arm as Representation (20 minutes): Demonstrate: Snake with classifier handshape for head, forearm representing body. Road with non-dominant arm extended, vehicle classifier traveling along it. Tree with forearm as trunk.

Students practice: Describe an elongated object using the arm as part of the representation. Partners assess whether the arm contribution is clear.

Ground Stability (20 minutes): Demonstrate the non-dominant arm as ground: table surface, road, baseline. Emphasize stability: if the ground drifts, the figure's relationship to it becomes ambiguous.

Practice: Establish a surface with the non-dominant arm. Move a classifier on the dominant hand relative to that surface through several actions. Maintain ground stability throughout.

Common error demonstration: ground drift. Have students identify drift in partner signing.

Manner Through Movement (15 minutes): Using a person classifier, demonstrate: walking normally, walking slowly, walking quickly, walking tiredly. Emphasize that manner appears through arm movement quality, not lexical addition.

Students practice conveying manner through movement quality alone.

SASS Practice (10 minutes): Describe objects of varying sizes using appropriate arm extension. Small object: minimal extension. Large object: full arm reach. Practice scaling arm involvement to referent size.

Closing (5 minutes): Assign reading: Chapter Seven. Preview: two-handed coordination and Battison's constraints.

Lesson Plan 7: Two-Handed Coordination (Chapter Seven)

Learning Objectives: By the end of this session, students will be able to: - Produce symmetrical signs with equal bilateral contribution - Produce asymmetrical signs with stable base hand - Maintain buoys for appropriate durations - Recognize and produce weak drop appropriately for register

Materials Needed: - Lists of symmetrical and asymmetrical signs - Video recording devices

Session Outline:

Opening (10 minutes): Review classifier ground stability. Transition: Today we examine two-handed coordination more broadly.

Battison's Constraints (15 minutes): Present the Symmetry Condition and Dominance Condition. Provide examples of each type. Discuss: Why do these constraints exist? (Motor coordination, perceptual organization.)

Symmetry Practice (15 minutes): Select symmetrical signs: SAME, MAYBE, BALANCE. Students practice with mirror or partner feedback, checking that both arms contribute equally. Identify and correct asymmetry.

Asymmetry Practice (15 minutes): Select asymmetrical signs: WRITE, BOOK, HELP. Students practice maintaining base hand stability while dominant hand moves. Focus specifically on base hand: Does it drift? Does it mirror unnecessarily?

Buoy Practice (10 minutes): Establish a list buoy. Maintain it while producing several signs with the dominant hand. Build duration: hold for one sign, then two, then three. Discuss fatigue management.

Weak Drop (10 minutes): Demonstrate casual weak drop in signs like SAME and MAYBE. Discuss: When is this appropriate? (Casual register, rapid signing.) When would it be inappropriate? (Formal contexts, emphasis.)

Practice producing both full two-handed and weak drop variants, matching to register.

Closing (5 minutes): Assign reading: Chapter Eight. Preview: the elbow as pivot point.

Lesson Plan 8: The Elbow as Pivot Point (Chapter Eight)

Learning Objectives: By the end of this session, students will be able to: - Describe the elbow's role in sign production and coarticulation - Recognize and release elbow locking - Use elbow angle for emotional expression and register modulation - Observe elbow transitions in fluent signing

Materials Needed: - Video of fluent signing for transition observation - Video recording devices

Session Outline:

Opening (10 minutes): Review two-handed coordination. Transition: Today we focus on the elbow specifically.

Elbow Anatomy and Function (15 minutes): Review elbow as hinge joint. Demonstrate range of motion. Discuss: What does elbow angle determine? (Hand distance from body, movement path shape, register scaling.)

Coarticulation and Transition (20 minutes): Introduce the elbow as "transition manager." Demonstrate anticipatory adjustment: during one sign's completion, the elbow begins preparing for the next.

View video of fluent signing. Students observe elbow movement specifically during transitions. Identify examples of anticipatory adjustment.

Discuss "economizer" function: small elbow adjustments can accommodate location changes without full shoulder re-aiming.

Elbow Locking (15 minutes): Demonstrate elbow locking during fingerspelling: rigid elbow, tension transferring to shoulder. Have students practice fingerspelling while checking for locking. Consciously release and resume.

Self-check practice: During any signing, pause periodically and assess elbow tension. Release if locked.

Expression and Register (10 minutes): Practice: Produce a statement with neutral elbow extension, then with full extension (emphatic), then with minimal extension (tentative). Discuss how elbow angle contributes to affect and register.

Connect to Chapter Five: Elbow angle is one of the fastest ways to scale signing without re-aiming the entire shoulder.

Closing (5 minutes): Assign reading: Chapter Nine. Preview: non-manual markers and arm integration.

Lesson Plan 9: Non-Manual Markers and Arm Integration (Chapter Nine)

Learning Objectives: By the end of this session, students will be able to: - Coordinate arm positioning with non-manual marker timing - Recognize NMM scope and maintain arm positioning through scope duration - Coordinate eye gaze with arm positioning for clear reference - Maintain sightlines (avoid facial obstruction)

Materials Needed: - Video recording devices - Mirror or partner for sightline feedback

Session Outline:

Opening (10 minutes): Review elbow pivot functions. Transition: Today we integrate arm positioning with non-manual markers.

Timing Coordination (15 minutes): Demonstrate question marking: raised eyebrows for yes/no, furrowed for WH. Note arm positioning that accompanies: slight forward extension for yes/no, orientation toward interlocutor for WH.

Practice: Students produce questions with attention to timing. Non-manual markers and arm positioning should begin and end together over the appropriate scope.

Scope and Spreading (15 minutes): Explain: NMMs spread over constituents, not single signs. Brow raise for yes/no extends over the entire questioned proposition. Headshake for negation may spread beyond NOT.

Practice: Produce multi-sign questions and negations with NMM scope extending appropriately. Maintain arm positioning through the full scope.

Common error: starting NMMs too late (only on final sign) or ending too early. Identify and correct.

Eye Gaze Coordination (20 minutes): Demonstrate: Establishing a referent with gaze toward the location. Subsequent reference includes gaze shift.

Demonstrate error: pointing without gaze shift. Discuss how reference appears weaker without gaze coordination.

Practice with partners: Establish referents, maintain gaze-arm coordination throughout a brief narrative. Partner assesses clarity of reference.

Discuss: Gaze can be reduced when loci are highly activated, but its presence strengthens reference.

Sightlines (10 minutes): Demonstrate facial obstruction: arms blocking face during two-handed or elevated signs. Review recording of own signing to identify obstruction moments.

Practice: Produce face-level signs with arms positioned to frame rather than obscure the face.

Closing (5 minutes): Assign reading: Chapter Ten. Preview: biomechanics, health, and video signing.

Lesson Plan 10: Biomechanics and Signing Health (Chapter Ten)

Learning Objectives: By the end of this session, students will be able to: - Identify muscular demands of different arm configurations - Recognize early warning signs of repetitive strain - Apply ergonomic principles to sustained signing - Adapt signing for video communication

Materials Needed: - Video call setup for camera positioning practice - Discussion of professional contexts (interpreting)

Session Outline:

Opening (10 minutes): Review NMM integration. Transition: Today we address the physical demands of signing and injury prevention.

Muscular Demands (15 minutes): Discuss: Which configurations are most fatiguing? (Elevated positions, extended positions, sustained holds.) Why? (Isometric contraction reduces blood flow; gravity resistance requires continuous effort.)

Experience fatigue: Hold arm in elevated position for sixty seconds. Note when tremor or fatigue begins. Discuss implications for buoys and platform signing. Students with shoulder pain or limitations should substitute a shorter hold or lower elevation and focus on noticing early fatigue cues.

Important: Remind students that they should stop immediately if they feel sharp pain. This lesson explores fatigue awareness, not injury endurance.

Repetitive Strain (15 minutes): Present common signing-related injuries: carpal tunnel, cubital tunnel, thoracic outlet, rotator cuff. Discuss risk factors: repetition without recovery, poor technique, ignoring warning signs.

Discuss warning signs: pain, numbness, tingling, weakness. Emphasize: Early response prevents chronic problems.

Note: This is information, not medical advice. This chapter is not a substitute for evaluation by a qualified clinician. Persistent symptoms warrant professional evaluation. Professional signers

(including Deaf professionals, interpreters, and educators) who experience ongoing discomfort should consult healthcare providers familiar with repetitive strain injuries.

Ergonomic Principles (15 minutes): Review: Maintain neutral when possible. Alternate proximal and distal. Take breaks. Warm up. Attend to warning signs. Maintain fitness.

Design a personal warm-up routine: shoulder, elbow, wrist, finger movements. Practice.

Video Signing Adaptation (15 minutes): Discuss camera distortion: depth flattening, frame constraints. Demonstrate elevated shoulder tension from trying to stay in frame.

Practice: Set up video frame. Sign naturally; review what stays in frame. Adjust camera position (lowering the camera to eye level or slightly below, rather than placing it high, often helps expand the visible signing area). Practice maintaining relaxed shoulders while staying visible.

Discuss compensation strategies: diagonal movement, increased NMM reliance.

Closing (5 minutes): Assign reading: Chapters Eleven and Twelve. Preview: acquisition, pedagogy, and variation.

Lesson Plan 11: Acquisition, Pedagogy, and Variation (Chapters Eleven and Twelve)

Learning Objectives: By the end of this session, students will be able to: - Describe developmental trajectory of arm positioning in L1 acquisition - Identify common L2 learner challenges and pedagogical approaches - Recognize regional, generational, and community variation - Apply variation awareness to their own learning and teaching

Materials Needed: - Video samples from diverse signers (if available) - Discussion questions on variation - Self-assessment tools

Session Outline:

Opening (10 minutes): Review biomechanics and health. Today: How is arm positioning acquired, taught, and varied across communities?

Acquisition (15 minutes): Discuss L1 acquisition: Deaf children acquire arm positioning gradually, integrated with linguistic development. Signing space expands with motor development; register variation emerges in later childhood.

Discuss L2 challenges: constrained signing space, inconsistent spatial reference, register-invariant production, coordination difficulties. Which of these affect your own signing?

Pedagogical Approaches (15 minutes): Review approaches from Chapter Eleven: explicit attention to space, mirror practice, video feedback, contrastive drills, register practice.

Discuss: Which approaches have been most helpful in your own learning? Which would you use in teaching?

For instructor-track students: Design a brief activity targeting one common learner error. Share with class.

Variation (20 minutes): Discuss: Regional variation, generational variation (residential school versus mainstream), Black ASL.

Key principle: Descriptions in textbooks represent particular varieties. Encountering different norms indicates variation, not error.

If video samples available: View signing from diverse sources. Discuss observed differences in signing space, proximal involvement.

Discuss video communication's potential influence on signing norms: Will compressed video signing become more general?

Self-Assessment and Goal Setting (10 minutes): Using checklists from Appendix C, students complete self-assessment. Identify two specific goals for continued development. Share with partner or class.

Closing (5 minutes): Summarize course themes. Emphasize: Arm positioning is meaning-bearing, learnable, and variable. Development continues beyond any course.

Lesson Plan 12: Integration and Assessment (Capstone Session)

Learning Objectives: By the end of this session, students will be able to: - Demonstrate integrated arm positioning skills across multiple dimensions - Self-assess using explicit criteria - Provide constructive feedback to peers - Articulate continued development goals

Materials Needed: - Video recording devices - Assessment rubrics - Peer feedback forms

Session Outline:

Opening (5 minutes): Brief review of course trajectory: from anatomy through variation. Today: integration and demonstration.

Integrated Performance (30 minutes): Each student presents a two-to-three minute prepared piece: narrative, explanation, or persuasive content. The piece should demonstrate: - Appropriate signing space for register - Consistent spatial reference - Arm-NMM coordination - Sightline maintenance - Register-appropriate proximal/distal involvement

Record all presentations for review.

Peer Feedback (20 minutes): In small groups, review recordings and provide structured feedback using rubric categories. Each student receives feedback on strengths and areas for development.

Emphasize: Feedback should be specific, observation-based, and constructive.

Self-Assessment (10 minutes): Students complete final self-assessment comparing to initial assessment from Lesson One. Identify growth areas and remaining development goals.

Course Closure (10 minutes): Discussion: What was most valuable? What will you continue practicing? How will you seek feedback after the course ends?

Final reminders: Community feedback overrides textbook descriptions. Development continues through interaction with diverse signers. Arm positioning is one dimension of a rich, complex language.

SUGGESTED COURSE SYLLABI

The following syllabi demonstrate how this text can be integrated into various course formats. Adapt as needed for your institutional context, student population, and course goals.

Syllabus A: Semester-Long Course (15 Weeks)

Course Title: Advanced ASL Articulatory Phonetics: Arm Positioning and Spatial Grammar

Course Description: This course examines the biomechanics and linguistics of arm positioning in American Sign Language. Students will develop conscious awareness of how arm configuration contributes to meaning, register, and fluency. Emphasis on practical application through video self-assessment and iterative feedback.

Course Learning Outcomes: Upon successful completion of this course, students will be able to: 1. Maintain stable spatial loci across multi-referent discourse without drift 2. Produce indicating verbs with consistent trajectories tied to established loci 3. Demonstrate register scaling through proximal/distal modulation while maintaining clarity 4. Coordinate non-manual marker scope with manual timing and phrase boundaries 5. Maintain face visibility (sightlines) while producing face-level and elevated signs 6. Demonstrate sustainable signing ergonomics appropriate for extended work and video contexts 7. Recognize and describe arm positioning variation across communities and contexts 8. Apply self-assessment strategies for continued development beyond the course

Prerequisites: - Intermediate ASL proficiency (equivalent to two years of study or ASL 4) - Familiarity with basic ASL linguistics terminology

Required Text: *Arm Angles in American Sign Language: A Study of Proximal Articulation in Signed Discourse*

Assessment Deliverables: - Baseline video (Week 1): 2-minute self-introduction for comparison - Midterm video (Week 7): 2-3 minutes, narrative with 2+ loci, 2+ indicating verbs, one role shift - Final video (Week 15): 3-5 minutes, includes question types, NMM scope demonstration, sightlines, and register contrast - Written reflections (3): 2-3 pages each, connecting reading to personal development - Peer feedback participation: Structured feedback on classmates' recordings

All performance videos are evaluated using Appendix E (Performance Assessment Rubric). Early videos may be graded on selected categories (e.g., Signing Space and Spatial Reference) to match course progression; the final video is scored summatively across all rubric categories.

Course Schedule:

Week 1: Introduction and Baseline Assessment - Reading: Preface - Topics: Course overview, expectations, baseline video recording - Activity: Initial self-assessment using Appendix C checklists

Week 2: Anatomical Foundations - Reading: Chapter One (first half) - Topics: Joint chain, degrees of freedom, shoulder complex - Activity: Joint isolation exercises (Exercise 1.1)

Week 3: Signing Space and Neutral Position - Reading: Chapter One (second half) - Topics: Signing space dimensions, neutral position, proprioception - Activity: Signing space mapping (Exercise 1.3), proprioceptive calibration

Week 4: The Near-Far Dimension - Reading: Chapter Two - Topics: Temporal reference, lexical time signs, spatial timelines - Activity: Lexical time sign analysis (Exercise 2.1), timeline establishment (Exercise 2.2), gradient extension practice (Exercise 2.3)

Week 5: The Vertical Dimension - Reading: Chapter Three - Topics: Lexical versus modified height, hierarchy, emphasis, register - Activity: Height variation exercises, hierarchical establishment

Week 6: The Horizontal Dimension - Reading: Chapter Four - Topics: Spatial reference, indexing, verb agreement, role shift - Activity: Multi-referent tracking, verb agreement drills

Week 7: Midterm Assessment - Activity: Video-recorded performance demonstrating spatial skills - Activity: Peer feedback session - Activity: Written reflection on development

Week 8: Proximal Articulation and Register - Reading: Chapter Five - Topics: Register variation, platform signing, dialectal variation, Black ASL - Activity: Register scaling practice, observation of diverse signers

Week 9: Classifier Predicates - Reading: Chapter Six - Topics: Arm as representation, ground stability, manner through movement - Activity: Classifier exercises with attention to arm contribution

Week 10: Two-Handed Coordination - Reading: Chapter Seven - Topics: Battison's constraints, symmetry, asymmetry, buoys, weak drop - Activity: Coordination drills, buoy maintenance practice

Week 11: The Elbow - Reading: Chapter Eight - Topics: Coarticulation, coupled articulators, elbow locking - Activity: Transition observation, locking self-check

Week 12: Non-Manual Integration - Reading: Chapter Nine - Topics: Timing, scope, eye gaze coordination, sightlines - Activity: NMM coordination practice, sightline check

Week 13: Biomechanics and Health - Reading: Chapter Ten - Topics: Muscular demands, injury prevention, video signing adaptation - Activity: Warm-up routine development, video signing practice

Week 14: Acquisition and Variation - Reading: Chapters Eleven and Twelve - Topics: Developmental trajectory, pedagogical approaches, community variation - Activity: Variation observation and discussion

Week 15: Final Assessment and Integration - Activity: Final video-recorded performance - Activity: Comprehensive self-assessment - Activity: Goal setting for continued development

Assessment: - Baseline and midterm video assessments: 20% - Final video performance: 30% - Written reflections (3): 20% - Peer feedback participation: 15% - Exercise completion and class participation: 15%

Syllabus B: Intensive Workshop (3 Days)

Workshop Title: Arm Positioning for Interpreters: A Biomechanical Approach

Workshop Description: This intensive workshop addresses arm positioning as a dimension of interpreting skill development. Designed for working interpreters and advanced interpreting students seeking to refine their physical production.

Prerequisites: - Working proficiency in ASL - Current interpreting practice or advanced interpreting coursework

Required Reading (pre-workshop): *Arm Angles in American Sign Language*, Preface and Chapters One through Five

Schedule:

Day One: Foundations (8 hours)

Morning Session (4 hours): - 8:00-8:30: Introductions, objectives, baseline recording - 8:30-10:00: Anatomical review, joint chain, neutral position - 10:00-10:15: Break - 10:15-12:00: Spatial dimensions overview (near-far, up-down, left-right)

Afternoon Session (4 hours): - 1:00-2:30: Spatial reference and verb agreement - 2:30-2:45: Break - 2:45-4:00: Register variation and proximal scaling - 4:00-5:00: Day One review, video self-assessment, goal setting

Day Two: Applications (8 hours)

Morning Session (4 hours): - 8:00-9:30: Classifier predicates and arm involvement - 9:30-9:45: Break - 9:45-11:00: Two-handed coordination, buoys in extended discourse - 11:00-12:00: The elbow: coarticulation and register pivot

Afternoon Session (4 hours): - 1:00-2:30: Non-manual integration: timing, scope, gaze - 2:30-2:45: Break - 2:45-4:00: Sightlines and video signing adaptation - 4:00-5:00: Interpreting-specific applications: platform work, video relay

Day Three: Integration and Assessment (6 hours)

Morning Session (4 hours): - 8:00-9:30: Biomechanics and injury prevention for interpreters - 9:30-9:45: Break - 9:45-11:00: Integrated practice: sample interpretation with arm positioning focus - 11:00-12:00: Peer feedback and coaching practice

Afternoon Session (2 hours): - 1:00-2:00: Final assessment recordings - 2:00-3:00: Self-assessment, goal setting, resources for continued development

Materials Provided: - Workshop handbook with exercises - Video recording access - Self-assessment checklists

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Syllabus C: Self-Directed Study Guide (8 Weeks)

Study Plan Title: Independent Study in ASL Arm Positioning

Description: This guide provides structure for learners using the text independently without instructor guidance. It assumes access to video recording capability and ideally a feedback partner (another learner, tutor, or community member).

Weekly Structure: Each week involves approximately 4-6 hours of study: - Reading: 1-2 hours - Exercises: 2-3 hours - Video review: 1 hour

Schedule:

Week 1: Foundations - Read: Preface and Chapter One - Complete: Exercises 1.1, 1.2, 1.3 - Record: Baseline two-minute self-introduction - Assess: Complete signing space and proprioception items from Appendix C

Week 2: Spatial Dimensions (Near-Far and Vertical) - Read: Chapters Two and Three - Complete: Exercises 2.1, 2.2, 2.3, 3.1, 3.2 - Record: Brief narrative involving past and future events - Assess: Review recording for temporal and vertical positioning

Week 3: Spatial Reference - Read: Chapter Four - Complete: Exercises 4.1, 4.2, 4.3 - Record: Story involving two characters with dialogue - Tip: If managing two characters feels overwhelming, focus on establishing just ONE character's location firmly before attempting dialogue. Build complexity gradually. - Assess: Check spatial consistency, verb agreement accuracy

Week 4: Register and Variation - Read: Chapter Five - Complete: Exercises 5.1, 5.2, 5.3 - Record: Same content in formal and casual registers - Assess: Compare recordings for signing space and proximal involvement

Week 5: Classifiers and Two-Handed Signs - Read: Chapters Six and Seven - Complete: Exercises 6.1, 6.2, 6.3, 7.1, 7.2, 7.3 - Record: Description of a complex scene using classifiers - Assess: Check arm contribution to classifiers, two-handed coordination

Week 6: Elbow and NMM Integration - Read: Chapters Eight and Nine - Complete: Exercises 8.1-8.5, 9.1-9.5 - Record: Content requiring multiple question types and role shift - Assess: Check elbow transitions, NMM coordination, sightlines

Week 7: Health and Context - Read: Chapters Ten, Eleven, and Twelve - Complete: Exercises 10.1, 10.2, 10.3 - Activity: Develop personal warm-up routine - Activity: If possible, observe diverse signers and note variation

Week 8: Integration and Goal Setting - Review: Skim all chapters, focusing on areas of difficulty - Record: Final comprehensive performance (3-5 minutes) - Assess: Complete all Appendix C checklists - Compare: Baseline versus final recording - Write: Reflection on development and goals for continued growth

Seeking Feedback: If possible, share recordings with: - ASL instructor or tutor - Deaf community member willing to provide feedback - Interpreting mentor - Study partner working through the same material

Community feedback is more valuable than self-assessment alone. Prioritize opportunities for external input.

BONUS MATERIALS

Frequently Asked Questions

The following questions arise frequently among learners working with arm positioning concepts. These responses supplement the main text.

Q: I've been signing for years. Will focusing on arm positioning make my signing worse before it makes it better?

A: Often, yes. This is the U-shaped learning curve common in skill refinement. When you bring unconscious processes into conscious awareness, fluency may temporarily decrease. You may feel mechanical, self-conscious, or slow. This is normal and necessary. Conscious competence precedes integrated fluency. Continue practicing through the awkward phase, and the new awareness will eventually become automatic.

Q: My Deaf teacher signs differently from what this book describes. Who is right?

A: Prioritize your Deaf teacher's guidance for the community and context you are learning in. This book describes patterns observed across many signers, but variation is the norm. If your teacher's signing differs from the book's descriptions, that difference likely reflects legitimate variation, pedagogical choices, or register-specific norms. Use this book as a framework for noticing patterns, not as a higher authority than lived community norms.

Q: How do I know if my signing space is "too small" or "too big"?

A: The question is not absolute size but contextual appropriateness. In casual conversation at close range, compact signing is natural. In platform presentation to a large audience, expanded signing is appropriate. If viewers consistently ask you to sign larger, or if they seem overwhelmed by signing that feels aggressive in intimate contexts, adjust accordingly. Seek feedback from fluent signers in varied contexts.

Q: I'm left-handed. Do I need to mentally reverse everything in this book?

A: Not everything. For motor descriptions involving dominant versus non-dominant hands, transpose the references (your left hand is dominant where the book says right). However, spatial reference assignments (establishing referent A on the left versus right) are discourse choices that do not necessarily reverse with handedness. The linguistic principles are the same; only the physical execution mirrors.

Q: How long does it take to develop good arm positioning?

A: Awareness can develop quickly; integrated fluency takes longer. You may notice significant improvement in specific skills within weeks of focused practice. Developing consistently appropriate arm positioning across all contexts, registers, and discourse types typically takes months to years. This is normal. Arm positioning is a dimension of fluency that continues developing throughout a signer's life.

Q: Can I develop arm positioning skills without access to Deaf community interaction?

A: You can develop awareness and control through the exercises in this book, video self-review, and observation of ASL video content. However, community interaction provides feedback that self-study cannot replicate. If regular Deaf community access is unavailable, seek periodic interaction when possible: workshops, Deaf events, online video calls with Deaf individuals willing to provide feedback. Some development is possible in isolation; full development requires community engagement.

Q: I'm an interpreter. Should my signing look like Deaf native signing?

A: Your signing should fall within the native range and be appropriate for context. This does not mean mimicking any individual Deaf signer's style. Interpreters often develop signing that is clear, readable, and register-appropriate for professional contexts. The goal is not imitation but competence that serves communication. Seek feedback from Deaf consumers of interpreting.

Q: The book mentions Black ASL. Should I try to sign like Black ASL signers?

A: No. Black ASL is a community variety with distinctive features that developed within Black Deaf communities. If you are not a member of that community, adopting its features would be appropriation, not competence. The book mentions Black ASL to explain that larger signing spaces are valid community norms, not to suggest that learners should imitate them. Sign in ways appropriate to your own developing competence and the communities you serve.

Q: How do I know if I have a signing-related injury or just normal fatigue?

A: Normal fatigue resolves with rest. Injury-related symptoms persist, recur, or worsen despite rest. Warning signs include: pain that continues after signing stops, numbness or tingling, weakness in grip or fine motor control, and symptoms that appear with less signing than previously tolerable. If symptoms persist beyond a few days of rest, seek professional evaluation. This book provides information, not medical advice.

Q: Does arm positioning matter for receptive skills, or only production?

A: Both. Understanding how arm positioning contributes to meaning improves comprehension of others' signing, not just your own production. You will notice spatial references, register cues, and classifier constructions more clearly when you understand the arm's contribution. Receptive and productive skills develop together.

Observation Guide: Analyzing Arm Positioning in ASL Video

When observing fluent ASL signing in video content, use this guide to focus attention on arm positioning specifically.

Before Viewing: - Select content where the signer's upper body is visible (avoid tight face-only framing) - Choose content of a type relevant to your learning goals (narrative, lecture, casual vlog, interpreted content) - Prepare to view multiple times, each time attending to a different dimension

First Viewing: Overall Impression - What is the general size of the signing space? - Does the signer appear relaxed or tense? - Is movement fluid or choppy?

Second Viewing: Proximal/Distal Involvement - How much shoulder movement is visible? - Are signs produced primarily from the wrist or with larger arm involvement? - Does involvement vary (more proximal for some content, more distal for others)?

Third Viewing: Spatial Reference - Does the signer establish referents at specific locations? - Are locations maintained consistently? - How does the arm move during indicating verbs?

Fourth Viewing: Transitions and Coarticulation - What does the elbow do between signs? - Is there anticipatory positioning? - Does the signer return to neutral between signs, or flow continuously?

Fifth Viewing: Non-Manual Coordination - Do arm positioning and non-manual markers align temporally? - Where does the signer look when pointing to established locations? - Do the arms ever obscure the face?

Questions to Consider: - What register does this signing represent? How does arm positioning reflect that register? - What would this signing look like with more proximal involvement? More distal? - What aspects of this signer's arm positioning would you like to develop in your own signing?

Quick Reference Card: Arm Positioning Principles

The Neutral Position: - Shoulder relaxed - Elbow at approximately 90 degrees - Forearm semi-pronated (palms facing each other) - Hand in center of signing space at chest height

Three Spatial Dimensions: - Near-Far: Often associated with temporal reference (forward = future, back = past), but primarily a discourse resource, not obligatory - Up-Down: Lexical location, iconic height, metaphorical hierarchy, emphatic elevation, register expansion - Left-Right: Primary field for spatial reference, referent tracking, verb agreement

Proximal versus Distal: - Proximal (shoulder-based): Often associated with formal register, emphasis, platform signing - Distal (wrist-based): Often associated with casual register, rapid signing, intimate contexts - This is a tendency, not a rule; variation exists

Key Distinctions: - Lexical location (where signs phonologically live) versus discourse-modified placement (meaningful positioning) - Spatial reference as grammar versus spatial metaphor as discourse resource

Common Errors: - T-Rex arms (elbows pinned to ribs) - Over-return to neutral (choppy signing) - Drifting loci (spatial inconsistency) - Elbow locking (rigid, tension-transferring) - Pointing without gaze shift (weak reference) - Facial obstruction (arms blocking NMMs)

Core Principles: - Community usage overrides textbook descriptions - Variation is the norm, not the exception - Conscious attention precedes integrated fluency - Feedback from Deaf community members is essential

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Video Self-Review Protocol

Use this protocol when reviewing recordings of your own signing. Structured review is more productive than casual watching.

Setup: - Record at least two minutes of connected discourse (narrative, explanation, or conversation) - Ensure full signing space is visible in frame - Review within 24 hours while the signing is fresh in memory

First Pass: Global Impression (watch without stopping) - How does my signing look overall? - What is my immediate reaction? - Note one strength and one concern

Second Pass: Signing Space (pause as needed) - What is the size of my signing space? - Is it appropriate for the register/context I intended? - Do I use the full space or restrict myself to a portion?

Third Pass: Spatial Reference (pause frequently) - When I establish referents, are locations clear? - Do locations remain consistent or drift? - Do my indicating verbs move between correct locations?

Fourth Pass: Transitions (watch at half speed if possible) - What happens between signs? - Do I return fully to neutral, or flow continuously? - Is there anticipatory positioning?

Fifth Pass: NMM Coordination - Do my arm movements align temporally with facial grammar? - Where do I look when pointing to established locations? - Do my arms ever block my face?

After Review: - Write down two specific observations - Identify one priority for next practice session - Save recording for comparison with future recordings

Comparison Protocol (monthly or quarterly): - Review current recording alongside baseline - Identify specific areas of growth - Identify persistent challenges - Adjust practice priorities accordingly

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Note: This index uses chapter and section references. Page numbers will be generated upon final print formatting.

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David Boles, MFA, has taught American Sign Language at New York University and online for 35 years. He founded the CUNY School of Professional Studies ASL Program 15 years ago. With his wife Janna Sweenie, he created HardcoreASL.com, a comprehensive seven-level ASL curriculum, sosASL.com, an ASL training program for First Responders, and the ASL-Opera.com project bringing Sign Language interpreted performances to opera stages worldwide. This is his eighth ASL book written with Janna. David holds an MFA from Columbia University and maintains memberships in the Dramatists Guild, Authors Guild, and PEN America. He is the founder and publisher of David Boles Books Writing & Publishing.

Janna Sweenie, MA, was born Deaf and educated at the Iowa School for the Deaf. She earned her BA in Psychology from CUNY Lehman College and her MA in Deafness Rehabilitation from New York University. In 2002, she achieved a "Superior Plus" rating on the Sign Communication Proficiency Interview, the highest level of ASL certification. Janna has taught American Sign Language at NYU for over 40 years, instructing Levels 1, 2, 3, 4, and 5. In 2014, she created the ASL Level 5 course, making NYU the first major university to offer instruction at that level, and served as the first Deaf Program Coordinator for the ASL program. She has interpreted for Broadway musicals including *42nd Street* and *Flower Drum Song*, and served as interpreter advisor for the Theatre Development Fund's program at Juilliard. Janna has also taught at LaGuardia Community College, Montclair State University, the College of New Rochelle, and the Lexington School for the Deaf. For over 23 years, she has served as a Vocational Rehabilitation Counselor for the Deaf with the New York State Department of Education.

ABOUT THIS BOOK

Publication Information

Title: Arm Angles in American Sign Language: A Study of Proximal Articulation in Signed Discourse

Edition: First Edition

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Intended Audience

This book is designed for:

- Advanced ASL learners seeking to refine physical fluency
- ASL interpreters developing platform signing and register control
- Interpreter educators and ASL instructors seeking pedagogical frameworks
- Linguistically curious signers interested in the biomechanics of signed language
- Heritage signers returning to deeper study of ASL

The text assumes intermediate-to-advanced ASL proficiency and familiarity with basic ASL linguistics concepts.

How to Cite This Work

For academic citation, use the following format (adapt to your required style):

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Feedback and Corrections

Readers who identify errors, have suggestions for future editions, or wish to share how they have used this text in their teaching or learning are encouraged to provide feedback. Corrections to factual errors are especially welcome.

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This is a Boles Book.

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End of Book