

Axis 5: AI-Assisted Translation in Sports Sciences

Lecture 5.1: The Role of AI in Academic Production

The final axis addresses the modern reality of academic and professional production: the ubiquitous use of Artificial Intelligence (AI) and Machine Translation (MT). For non-native English speakers, these tools are powerful allies but present significant risks if used without a "human-in-the-loop" approach.

5.1.1 The Tool Landscape

- **DeepL / Google Translate:** Neural Machine Translation (NMT) engines. Excellent for initial drafts but often struggle with highly specific sports terminology (polysemy).
 - *Example of Failure:* Translating "spotting" (in weightlifting safety) might be mistranslated as "seeing" or "locating" in general contexts.
- **Grammarly / Paperpal:** AI-powered editing tools. These focus on grammar, syntax, and academic tone. Paperpal is specifically trained on academic manuscripts.³³
- **Generative AI (ChatGPT/Claude):** Can be used for brainstorming, summarizing, and rephrasing, but prone to "hallucinations" (inventing facts or citations).³⁴

5.1.2 The Translation Workflow

To use AI effectively in Master's level work, students should follow a three-step process:

1. **Pre-editing:** Simplifying the source text (Arabic/French) to remove ambiguity before feeding it to the AI.
2. **Machine Translation:** Generating the English draft.
3. **Post-editing (MTPE):** The most critical step. The human expert reviews the output for:
 - **Terminological Accuracy:** Ensuring "resistance" isn't translated as "opposition" in a political sense.
 - **Style:** Ensuring the tone is academic (passive/active voice balance).
 - **Cohesion:** Checking that transition words make sense.³⁶

Lecture 5.2: Ethics and Academic Integrity

5.2.1 Ethical Guidelines

The use of AI in scientific writing is a subject of intense ethical debate.

- **Transparency:** Most journals (and universities) now require authors to disclose if AI was used in the drafting process.

- **Accountability:** The human author is **fully responsible** for the accuracy of the text. If the AI translates a number incorrectly or hallucinates a citation, the *student* is liable for academic misconduct.
- **Plagiarism:** Copying AI-generated text without review can be considered plagiarism of ideas or form. Using AI to polish *your own* ideas is generally acceptable; using AI to *generate* the ideas is not.³⁸

5.2.2 Bias in AI

AI models are trained on internet data, which contains biases.

- **Gender Bias:** AI often defaults to male pronouns when translating "athlete" or "coach," and female pronouns for "nurse" or "dancer." Students must manually correct this to ensure inclusive language (e.g., using "they" or specific gender references).
- **Cultural Bias:** Idioms from Arabic might be translated literally, losing meaning. "Breaking the fast" (nutrition) vs. "Breakfast".³⁹

Conclusion

This Comprehensive Course Reader has traversed the landscape of English for Sports Training, from the microscopic details of lactate thresholds and mitochondrial density to the macroscopic structure of a systematic review and the ethical implications of Artificial Intelligence.

For the Master 1 student, the mastery of this material is not merely an academic requirement; it is a professional necessity. The global language of high-performance sport is English.

- The ability to distinguish between **kinematics** and **kinetics** allows for accurate biomechanical diagnosis.
- The understanding of **IMRaD** structure allows for the consumption and publication of findings that can alter coaching practices globally.
- The nuance of **pedagogical communication** transforms a knowledgeable coach into an effective teacher.
- The ethical use of **AI tools** ensures that this new generation of sports scientists remains at the cutting edge of innovation while upholding the integrity of the discipline.

Students are encouraged to utilize this document as a constant reference manual throughout their Master's degree and into their professional careers.

Appendix A: Comparison of Periodization Models (Data Table)

Feature	Linear Periodization	Undulating (Non-Linear) Periodization	Block Periodization
Focus	Parallel development of traits (High Volume -> High Intensity).	Frequent variation of Volume/Intensity (Daily/Weekly).	Sequential development of specific traits (Concentrated loads).
Target Audience	Beginners / Novices with lower training age.	Intermediate / Advanced athletes.	Elite athletes with high training age.
Pros	Easy to plan; predictable progressive overload.	Prevents neural fatigue; adaptable to schedule.	Minimizes conflicting signals; maximizes specific adaptations.
Cons	"Peaking" is rigid; risk of detraining endurance during power phase.	Can be complex to manage; risk of accumulative fatigue.	High risk of overtraining if volume is managed poorly.
Key Terminology	Hypertrophy Phase, Strength Phase, Power Phase.	DUP (Daily Undulating Periodization), WUP (Weekly).	Accumulation, Transmutation, Realization, Residual Effect.

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Appendix B: Assessment of "Overtraining" vs. "Overreaching"

State	Performance Outcome	Recovery Time	Physiological Symptoms	Psychological Symptoms
Acute Fatigue	Temporary decline	Days	Muscle soreness, mild elevation in HR.	Normal variability.
Functional Overreaching (FOR)	Temporary decline - > Supercompensation	Days to Weeks	Altered hormonal profile, increased HR.	Mild fatigue.
Non-Functional	Stagnation or decline	Weeks to Months	Neuroendocrine disturbances, sleep issues.	Irritability, mood swings.

State	Performance Outcome	Recovery Time	Physiological Symptoms	Psychological Symptoms
Overreaching (NFOR)				
Overtraining Syndrome (OTS)	Long-term decrease	Months to Years	Sympathetic/Parasympathetic dysfunction, immune suppression.	Depression, anxiety, total loss of motivation.