



WHY MORSE CODE?

JERRY / KOES

WHY MORSE CODE? – THE STANDARD REASONS

- Requirement for licensure prior to 2007

Dropped for Technician license February 23, 2007

Since the requirement was dropped, resurgence of CW

- Novice requirement – copy 5 wpm
- General requirement – within 1 year → 13 wpm
- Advanced requirement – 20 wpm – no time constraint

ADD ANOTHER DIMENSION TO HAM RADIO

- Challenge: Simpler equipment – more operator skill
- Weak signal mode gets through when SSB can't
- QRP – 5W
- SOTA/POTA – in CO 1805 designated summits & 85 POTA parks
- Radio/Antenna Building

Kits: QRP-Labs, QRPGuys, 4 States QRP Group, et al

Homebrew

WHY MORSE CODE – MY REASONS

- Make use of my dormant FCC license
- Keep my brain active when I became sedentary
- Avoid or ameliorate dementia/Alzheimer's Disease
- Maintain social contact when home bound
-



USE IT OR LOSE IT

JERRY KIRSHENBAUM, MD, MHA, RICP

/ KOES

USE IT OR LOSE IT

- Truism for both dementia and morse code

Common sense

Generally accepted

Didn't look for documentation until preparing for this talk

- Personal comment

Family History

I'm counting on it being true for both

MY REASONS FOR LEARNING MORSE CODE TO COMMUNICATE

- Learn a second Language
- Mental challenge
- Open new circuits in the brain
- One of the ways to fend off dementia and Alzheimer's Disease

DEMENTIA

- **dementia** | də'men(t)SH(ē)ə |
- **noun** *Medicine*
- a chronic or persistent disorder of the mental processes caused by brain disease or injury and marked by memory disorders, personality changes, and impaired reasoning.
- **ORIGIN**
- late 18th century: from Latin, from *demens*, *dement-* 'out of one's mind'.

ALZHEIMER'S DISEASE

- Alzheimer's disease, also referred to simply as Alzheimer's, is a neurodegenerative disease that usually starts slowly and gradually worsens over time. It is the cause of **60–70%** of cases of dementia. The most common early symptom is difficulty in **remembering** recent events. As the disease advances, symptoms can include problems with language, disorientation, mood swings, loss of motivation, self-neglect, and behavioral issues.

Second Language can Delay Alzheimer's

OneAndOnlyJosh  25  10  6

Here is just another simple reason to learn language(s). This is a article written by Laura Neergaard of the *Associated Press*. Happy Reading:

2nd language may delay Alzheimer's

"Mastering a second language can pump your brain in ways that seem to delay getting Alzheimer's disease later on", scientists said on Friday. Never learned to *habla* or *parlez*? While the new research focuses mostly on the truly long-term bilingual, scientists say even people who tackle a new language later in life stand to gain.

The more proficient you become, the better, but, "every little bit helps," said Ellen Bialystok, a psychologist professor at York University in Toronto. Much of the study of bilingualism has centered on babies, as scientists wondered why simply speaking to infants in two languages allows them to learn both in the time it takes most babies to learn one.

Their brains seem to become more flexible, better able to multitask. As they grow up, their brains show better "executive control," a system key to higher functioning -- as Bialystok puts it, "the most important part of your mind".

pubmed.ncbi.nlm.nih.gov/26304153/

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> Hum Brain Mapp. 2015 Nov;36(11):4512-28. doi: 10.1002/hbm.22939. Epub 2015 Aug 25.

From perceptual to lexico-semantic analysis--cortical plasticity enabling new levels of processing

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Affiliations + expand
PMID: 26304153 PMCID: PMC5049624 DOI: 10.1002/hbm.22939
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Abstract

Certain kinds of stimuli can be processed on multiple levels. While the neural correlates of different levels of processing (LOPs) have been investigated to some extent, most of the studies involve skills and/or knowledge already present when performing the task. In this study we specifically sought to identify neural correlates of an evolving skill that allows the transition from perceptual to a lexico-semantic stimulus analysis. Eighteen participants were trained to decode 12 letters of Morse code that were presented acoustically inside and outside of the scanner environment. Morse code was presented in trains of three letters while brain activity was assessed with fMRI. Participants either attended to the stimulus length (perceptual analysis), or evaluated its meaning distinguishing words from nonwords (lexico-semantic analysis). Perceptual and lexico-semantic analyses shared a mutual network comprising the left premotor cortex, the supplementary motor area (SMA) and the inferior parietal lobule (IPL). Perceptual analysis was associated with a strong brain activation in the SMA and the superior temporal gyrus bilaterally (STG), which remained unaltered from pre and post training. In the lexico-semantic analysis post learning, study participants showed additional activation in the left inferior frontal cortex (IFC) and in the left occipitotemporal cortex (OTC), regions known to be critically involved in lexical processing. Our data provide evidence for cortical plasticity evolving with a learning process enabling the transition from perceptual to lexico-semantic stimulus analysis. Importantly, the activation pattern remains task-related LOP and is thus the result of a decision process as to which LOP to engage in.

Keywords: cortical plasticity; fMRI; learning; levels of processing; perception.

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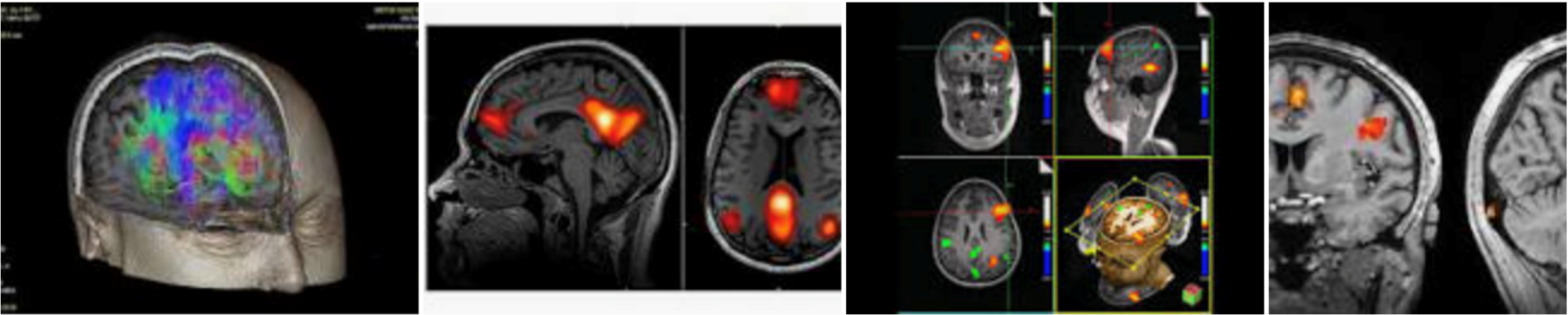
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FROM PERCEPTUAL TO LEXICO-SEMANTIC ANALYSIS-CORTICAL PLASTICITY ENABLING NEW LEVELS OF PROCESSING.

- 18 participants trained to recognize 12 letters in MC were scanned with fMRI*
- “MC learning leads also to functional changes when processing acoustically presented MC-stimuli, by allowing a higher cognitive (and language related) network to be activated”

*fMRI – Functional magnetic resonance imaging

Screen Shot 2021-02-11 at 3.02.25 PM



Functional magnetic resonance imaging or functional MRI (**fMRI**) measures brain activity by detecting changes associated with blood flow. This technique relies on the fact that cerebral blood flow and neuronal activation are coupled. When an area of the brain is in use, blood flow to that region also increases.






[https://en.wikipedia.org > wiki > Functional_magnetic_res...](https://en.wikipedia.org/wiki/Functional_magnetic_res...)



ORIGINAL RESEARCH ARTICLE

Front. Hum. Neurosci., 26 July 2017 | <https://doi.org/10.3389/fnhum.2017.00383>

Learning Morse Code Alters Microstructural Properties in the Inferior Longitudinal Fasciculus: A DTI Study

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- ³Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands
- ⁴Department of Biopsychology, Ruhr Universität Bochum, Bochum, Germany
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Learning relies on neuroplasticity, which has mainly been studied in gray matter (GM). However, there is mounting evidence indicating a critical role of white matter changes involved in learning processes. One of the most important learning processes in human development is language acquisition. However, due to the length of this learning process, it has been notoriously difficult to investigate the underlying neuroplastic changes. Here, we report a novel learning paradigm to assess the role of white matter plasticity for language acquisition. By acoustically presenting Morse Code (MC) using an in house developed audio book as a model for language-type learning, we generated a well-controlled learning environment that allows for the detection of subtle white matter changes related to language type learning in a much shorter time frame than usual language acquisition. In total 12

LEARNING MORSE CODE ALTERS MICROSTRUCTURAL PROPERTIES IN THE INFERIOR LONGITUDINAL FASCICULUS: A DTI STUDY*

- Learning a 2nd language has been shown to increase gray matter density as well as cognitive learning and motor skill
- Learning MC leads to functional plasticity in language related brain regions

*Diffusion tensor imaging (**DTI**) has become one of the most popular MRI techniques in brain **research**

Impact of Bilingualism on Brain Reserve and Metabolic Connectivity in Alzheimer's Dementia.pdf

Home Tools Impact of Bilingualism x

1 / 6 107%

The impact of bilingualism on brain reserve and metabolic connectivity in Alzheimer's dementia

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Edited by Leslie G. Ungerleider, National Institute of Mental Health, Bethesda, MD, and approved December 23, 2016 (received for review July 5, 2016)

Cognitive reserve (CR) prevents cognitive decline and delays neurodegeneration. Recent epidemiological evidence suggests that lifelong bilingualism may act as CR delaying the onset of dementia by ~4.5 y. Much controversy surrounds the issue of bilingualism and its putative neuroprotective effects. We studied brain metabolism, a direct index of synaptic function and density, and neural connectivity to shed light on the effects of bilingualism in vivo in Alzheimer's dementia (AD). Eighty-five patients with probable AD and matched for disease duration (45 German-Italian bilingual speakers and 40 monolingual speakers) were included. Notably, bilingual individuals were on average 5 y older than their monolingual peers. In agreement with our predictions and with models of CR, cerebral hypometabolism was more severe in the group of bilingual individuals with AD. The metabolic connectivity analyses crucially supported the neuroprotective effect of bilingualism by showing an increased connectivity in the executive control and the default mode networks in the bilingual, compared with the monolingual, AD patients. Furthermore, the degree of lifelong bilingualism (i.e., high, moderate, or low use) was significantly correlated to functional modulations in crucial neural networks, suggesting both neural reserve and compensatory mechanisms. These findings indicate that lifelong bilingualism acts as a powerful CR proxy in dementia and exerts neuroprotective effects against neurodegeneration. Delaying the onset of dementia is a top priority of modern societies, and the present in vivo neurobiological evidence should stimulate social programs and interventions to support bilingual or multilingual education and the maintenance of the second language among senior citizens.

bilingualism | Alzheimer's dementia | fluorine-18-fluorodeoxyglucose PET | brain reserve | brain metabolic connectivity

Many studies reported that cognitive activities and environmental factors, such as lifelong exposure to stimulating cognitive, social, and physical activities, as well as high socioeconomic status and educational and occupational attainments, provide a cognitive reserve (CR) potentially delaying dementia onset (1, 2). In vivo neuroimaging has provided important insights into the neural correlates of CR. For example, structural MRI studies in healthy aging consistently reported positive associations between CR and brain volume in the hippocampus (3), the prefrontal cortex (4), the posterior parietal cortex (5), the anterior cingulate cortex (6), the superior temporal gyrus (7), the superior frontal gyrus (8), the superior parietal lobule (9, 10) and, in addition, with increased metabolism in the dorsolateral prefrontal cortex, suggesting a compensatory mechanism against AD-related cerebral neurodegeneration (11). To date, strong epidemiological evidence suggests that bilingualism may also contribute to CR (12). Crucially, older bilingual individuals manifest symptoms of AD significantly later than comparable monolinguals (13–15), with an approximate delay of 4.5 y. Furthermore, bilingual speakers also show significantly better cognitive recovery following stroke than monolinguals (16). As to causal mechanism, these protective effects may be a direct consequence of how the human brain has adapted to the “extra effort” provided by handling two or more languages (17, 18). The most important cognitive mechanism has been referred to as the “language control” mechanism (19). This language control device is considered part of the more general executive control system, and the extra use of this system in bilingual speakers may induce brain plasticity within the related cognitive control brain network (20). Structural neuroimaging studies have consistently reported increased gray and/or white matter densities for bilingual individuals in brain structures linked to executive control, such as the anterior cingulate cortex (ACC), the left prefrontal cortex, the left inferior parietal lobule, and the left caudate (for a review, see ref. 17). Of note, also in older healthy bilingual subjects, with many years of second language experience, recent structural neuroimaging studies reported increased white matter integrity (21) and gray matter volume in the anterior temporal lobes, orbitofrontal cortex (22), and inferior parietal lobules (23). Specifically for aging populations, this neural reserve may eventually protect against cognitive decline (24). An enhanced neural efficiency was also shown in bilingual seniors, with an increased functional connectivity in the frontoparietal network for executive control

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Significance

Recent epidemiological studies report that lifelong bilingualism may delay dementia onset. However, the underlying neural mechanism of these protective effects is largely unknown. Using fluorodeoxyglucose and PET to investigate brain metabo-

THE IMPACT OF BILINGUALISM ON BRAIN RESERVE AND METABOLIC CONNECTIVITY IN ALZHEIMER'S DEMENTIA*

- Cognitive reserve (CR) prevents cognitive decline and delays neurodegeneration.
- These findings indicate that lifelong bilingualism acts as a powerful CR proxy in dementia and exerts neuroprotective effects against neurodegeneration.
- Delaying the onset of dementia...interventions to support bilingual or multilingual education and the maintenance of the second language among senior citizens.

*www.pnas.org/cgi/doi/10.1073/pnas.1610909114

MORSE CODE

- **ORIGIN** mid 19th century: named after Samuel F. B. Morse (1791–1872), American inventor.
- Second language
- *Visually*, combinations a dots and dashes representing letters & numbers
- *Auditorily*, combinations a short & long tones representing letters & numbers

MY PATH TO HAM RADIO AND CW

- RC airplanes - FPV

“FCC doesn’t have time for guys like us.”

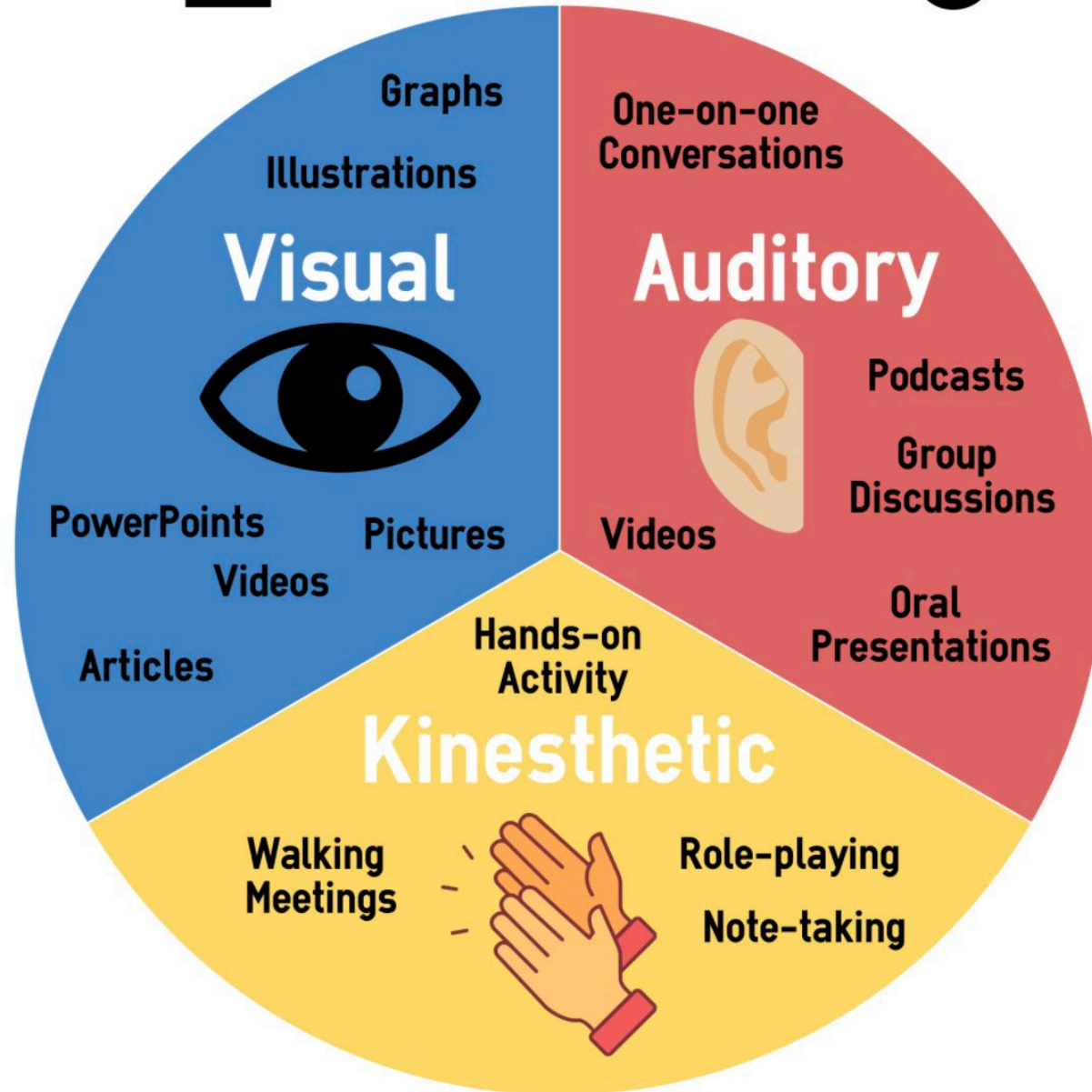
Hamtestonline

- Technician license January 9, 2018
- General license February 2018
- Parker Radio Association February 2018
- Back problem (L5-S1 disk) – summer 2018 → PT, resolved
- New need: a cerebral activity in a sedentary lifestyle

MY SOLUTION

- Utilize my ham radio license
- Initial goal: Learn Morse Code to have conversations on the air (ragchew)

LEARNING STYLES



ncbi.nlm.nih.gov/pmc/articles/PMC4340450/#:~:text=In%20the%20general%20population%2C%20the,%25%20audit...

Journal List > Curr Health Sci J > v.40(2); Apr-Jun 2014 > PMC4340450



Curr Health Sci J, 2014 Apr-Jun; 40(2): 104–110. PMID: PMC4340450
Published online 2014 Mar 29. doi: 10.12865/CHSJ.40.02.04

Learning Styles of Medical Students - Implications in Education

ALINA-MIHAELA BUȘAN¹

Author information Article notes Copyright and License information Disclaimer

This article has been cited by other articles in PMC.

Abstract

Background: The term “learning style” refers to the fact that each person has a different way of accumulating knowledge. While some prefer listening to learn better, others need to write or they only need to read the text or see a picture to later remember. According to Fleming and Mills the learning styles can be classified in Visual, Auditory and Kinesthetic. There is no evidence that teaching according to the learning style can help a person, yet this cannot be ignored. Subjects and methods: In this study, a number of 230 medical students were questioned in order to determine their learning style. Results: We determined that 73% of the students prefer one learning style, 22% prefer to learn using equally two learning style, while the rest prefer three learning styles. According to this study the distribution of the learning styles is as following: 33% visual, 26% auditory, 14% kinesthetic, 12% visual and auditory styles equally, 6% visual and kinesthetic, 4% auditory and kinesthetic and 5% all three styles. 32 % of the students that participated at this study are from UMF Craiova, 32% from UMF Carol Davila, 11% University of Medicine T Popa, Iasi, 9% UMF Cluj Iulius Hatieganu. Discussions: The way medical students learn is different from the general population. This is why it is important when teaching to considerate how the students learn in order to facilitate the learning

Keywords: medicine students, learning styles

Introduction

The term “learning styles” refers to the concept that individuals differ in regard to what mode of instruction or study is most effective for them. Proponents of learning-style assessment contend that optimal instruction requires diagnosing individuals’ learning style and tailoring instruction accordingly.

Formats: Article | PubReader | ePub (beta) | PDF (143K) | Cite

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Similar articles in PubMed:

- Learning style preferences of surgical residency applicants. [J Surg Res. 2015]
- Learning style preferences: A study of pre-clinical medical students in Barbados. [J Adv Med Educ Prof. 2017]
- Learning styles of first-year medical students attending Erciyes University in Kayseri, Turkey. [Adv Physiol Educ. 2007]
- Exam Success at Undergraduate and Graduate-Entry Medical Schools: Is Learning Style or Learning Ability? [Teach Learn Med. 2015]
- Intellectual style theories: different types of categorizations and their relevance for practitioners. [Springerplus. 2014]

Cited by other articles in PMC:

- A hemodialysis curriculum for nephrology fellows using a blended learning approach: best of both work [Journal of Nephrology. 2021]
- PLASTA National Webinar Series: A developing model for remote surgical education [Journal of Plastic, Reconstruct...]
- Using 3D Printing Technology to Teach Cartilage Framework Carving for Ear Reconstruction [Frontiers in Surgery. 2020]
- A significant association between examination results and self-satisfaction with English language proficiency [BMC Research Notes. 2018]
- Blending Gagne’s Instructional Model with Peyton’s Approach to Design an Introductory Bioinformatics [JMIR Medical Education. 2018]

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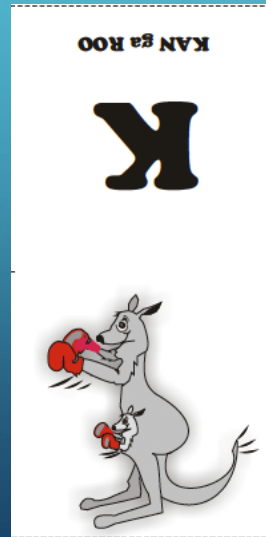
33% visual, 26% auditory, 14% kinesthetic, 12% visual and auditory styles equally, 6% visual and kinesthetic, 4% auditory and kinesthetic and 5% all three styles

MY LEARNING STYLE - VISUAL

- Take copious notes – eye/hand path to brain
- Definitely not auditory – not even a stereo in my house

EFFORTS TO LEARN CODE 2018

- Code Quick – Gerald Wheeler – 30 day Success Formula
 - Sounds alike - K = kan-ga-roo
 - Cartoon for each character



EFFORTS TO LEARN CODE 2018

- Gordon West CD's
- MorseDX – online
- CW Academy – CWA (<https://cwops.org/>)
- Long Island CW Club - LICW (<https://longislandcwclub.org/>)



HOME

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Tweets by @LongIslandCW

 **LongIslandCWClub**
@LongIslandCW

Pluto 100th Anniversary SES station operating this week. Some ops on the air from their homes, and some from the Lowell Observatory. #ssb, #cw, and #ft8 going on! #hamradio @LowellObs nadxa.com/w7p_pluto_2030...

4h

 LongIslandCWClub Retweeted

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LEARN MORSE CODE – CW

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HELPING MAKE CW GREAT AGAIN



 1314
MEMBERS

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STATES

 25
COUNTRIES

 75
CLASSES

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LICW (LONGISLANDCWCLUB.ORG)

- Zoom sessions with a Coordinator
- Ongoing – multiple levels – no specific structure
- Calendar – 75 classes
- Extensive library of materials via Dropbox
- Participate as you wish
- No accountability – requires self-discipline

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
31	1	2	3	4	5	6
Morserino Users Group 10am	CW Warm UP 8am	CW Tortoises 8-10wpm 3pm (ZOOM B)	CW Tortoises 8-10wpm 3pm (ZOOM B)	CW Tortoises 8-10wpm 3pm (ZOOM B)	CW Tortoises 8-10wpm 3pm (ZOOM B)	Beginners 1 class 9am
Antenna Forum 11am	NV1U Memorial Review Class 2pm	B1/B2 Review 4am	NV1U Memorial Review Class 2pm	NV1U Memorial Review Class 2pm	CW Warm Up 8am	Beginners 2 class 10am
Sending Consistency 12 Noon	CW Tortoises 8-10wpm 3pm (ZOOM B)	Beginners 2 class 6am	ICOM 7300 Users Group 3pm	Recorded QSO Copy Class 6pm	NV1U Memorial Review Class 2pm	SOTA-POTA-QRP Forum 11am
Beginners 1 class 6pm	Beginners 1 class 3pm	NV1U Memorial Review Class 2pm	Live DX QSO Training 530pm	Beginners 1 class 7pm	Beginners 1 class 4pm	Presentation Series no. 42: WebSDRS: A Useful Tool 12 Noon
Beginners 2 class 7pm	Beginners 2 class 4pm	Intermediate class 4pm	B1 Prep Class 7pm	Get on the Air Today! 7pm (ZOOM B)	Beginners 2 class 5pm	Boat Anchor (Vintage Gear) Forum 1pm (ZOOM B)
K1USN SST Assistance Class 7pm (ZOOM B)	LICW Intro Class 7pm	Live Intermediate QSO Training 5pm	CW Makers 7pm (ZOOM B)	Ask the Master/Extra License Review 8pm	Contest Class 6pm	Elmer 101 7pm
YL4CW Confidence Builder session 8pm	The Dr. is in 7pm (ZOOM B)	Beginners 2 class 6pm (ZOOM B)	B1/B2 Review Class 8pm	Getting over the 11-15wpm plateaus 9pm	CW over repeaters project 7pm	YL4CW Gathering of the Gals 9pm
15-20wpm CW Training Class 9pm	Beginners 1 Class 8pm	Slow Speed Net Training class 7pm	Advanced 20wpm Plus class 8pm (ZOOM B)	QRQ 20-40wpm training class 9pm (ZOOM B)	Friday Fun with CW & CW Revelations 8pm	
	Bug, Cootie, Str. Key Forum 8pm (ZOOM B)	Informal Rag Chew class 8pm	Intermediate Class 9pm	Beginners 1 class 10pm	Internet CW 'V Band' Forum & Sprint 9pm	
	Round Robin Sending Class 9pm	Beginners 2 class 9pm	Tips & Tricks of Intermediate QSOs 10pm	Wayne's World 5-10wpm 10PM (ZOOM B)	CW + Meditation 10pm	
	Demystifying the QSO 10pm	CW Tune UP class 9pm (ZOOM B)		Demystifying the QSO 11pm		
		Head Copy for QSOs 10pm				



CWops

Celebrating the unique art form of Morse Code

CW ACADEMY

- Zoom sessions with an Advisor
- Goal: Instant Character Recognition (ICR)
- 2 one-hour sessions/week x 8 weeks
- Study 30-45 minutes every day
- Sessions intended to provide review and accountability

CWA CURRICULUM

	Entry	Graduation
• Beginner	0	5
• Basic	5	10
• Intermediate	10	20
• Advanced	20	25

METHODS OF LEARNING MORSE CODE

- Traditional

Approach used in the military

Memorize the patterns of dits/dahs for each character

Requires a cerebral translation process

hear dit dit dah dit → see in mind's eye → F

- ICR (Instant Character Recognition)

Listen to the sound pattern of each character

hear dit dit dah dit → F

Goal: Head copy



A PATTERN RECOGNITION METHOD OF LEARNING MORSE CODE

By M. D. ALLAN

Senior Psychologist at the Branch of Scientific Advisor to Air Ministry

This study is concerned with a comparison between the traditional 'analytic' method of learning the morse code, and a 'Gestalt' approach called the Pattern Recognition method. The Pattern Recognition technique consists of transmitting characters right from the start at a speed corresponding to 20 words per minute. There is no preliminary memorizing of the alphabet. All the pupils have to do is to listen to the whole character (i.e. a letter or a number) transmitted at 20 words per minute and, when the instructor has written its meaning on the blackboard, to copy it down. This sort of drill is continued until all the 36 characters (26 letters and 10 numerals) are instantly recognized by their distinctive sound patterns. The pilot experiment showed that pupils trained by the Pattern Recognition method had a significantly better knowledge of the alphabet, after the same amount of training, than pupils trained analytically. As an applied technique in a short intensive course, the Pattern Recognition method produced significantly fewer unsatisfactory pupils during the training period. In a long course, where pupils practised at whatever speed they were capable, pupils trained by the Pattern Recognition method arrived at high speeds earlier than those trained analytically.

HEAD COPY TECHNIQUES


- Word Sound Recognition – CQ, DE, RST, QTH, NAME, 73, TU
- Times Square Banner – back of eyelid streaming
- Phonic copy

reflector.sota.org.uk/t/techniques-for-head-copying-cw-qsos/24866

SOTA Reflector Sign Up Log In

Techniques for head copying CW QSOs

On the Bands Operating Procedures

 **G8CPZ** 1 20d 23 Jan 1 / 62 23 Jan Back 4d ago

I got interested in head copying Morse some months ago and have been working with other local amateurs here in south Cumbria who are also learning to head copy. We're making fair to good progress so far but I would like to hear from SOTA expert head-copyers for their experiences and advice about the effectiveness of different techniques or methods.

My motivation: since I my passed the Morse test about 25 years ago and got my 'A' licence (M0ALC) I've been transcribing everything to paper. I unconsciously write it down and then quickly look back at what I've written. This has limited me to about 20wpm because I can't write faster [not to mention blunting the pencil lead quickly]. As most of my operating is as a SOTA activator, I would like to get to the point where the only info I'm writing in my little notebook at the summit is what I need for my SOTA log.

I've been head copying GB2CW on-air and listening to ARRL's W1AW slow Morse archives, the Ham Morse app plus the 4-way QRS 2m CW QSOs our head-copying group have from time to time.

Currently, I'm using two methods:

1. Word sound recognition - you recognize the unique sound of the word, e.g. standard abbreviations CQ, 73, DE, RST and common short words. Most or all of us know some words like this and many more are added over time simply by constantly hearing them.
2. 'Blackboard' or 'back of the eyelid' - where you assemble the incoming letters in your mind until you predict the word correctly or have all the letters. For me, most less-common and long words fall into this camp. But I'm finding some have already transferred into the first method.
3. 'Phonic copy' [I am not using this method] - treating the successive letters of a word like a slowly pronounced spoken word. This is described in <http://n6ev.com/articles/phonic-method> 27

I'm interested to hear from anyone who has used this method. I can see that it might work with languages like Italian, which [I'm told] is highly phonetic, so in most cases you can predict the pronunciation of the word from the letter sounds. However, with English, we all know, the spelling is a mess, it's a highly unphonetic language, so I can't see how this method would work.

I see no alternative, for those words that you haven't yet memorized as a unique sound [e.g. CQ] than

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<https://reflector.sota.org.uk/t/techniques-for-head-copying-cw-qsos/24866>

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Head Copy CW, An Alternative Method: 'Phonic Copy'

by **Paul Carreiro, N6EV** (Updated February 4, 2017)

As with any processes, there are alternate methods to achieve an end goal. Since I hadn't seen it depicted yet in the various discussions about head copy, I want to share the method I use. Like many have testified, my transition from written to head copy came by operating true mobile CW operation (in motion.. as opposed to portable operation) where written copy is impossible / impractical.

Before we break down the phonic method of head copy, let's first consider basic code reception with the following concept from Steve, N8CPA: "Letters are graphic representations of sound. Code is an aural representation of graphic representations of sounds." At the beginner level of code reception, code elements are received audibly; mentally converted to a letter representation of that code element; then that letter representation is written down. Comprehension of the content of the message occurs only after the written letters are constructed into words and sentences. As proficiency increases, the speed of this conversion improves, and perhaps the method of writing down each letter becomes more efficient. But the basic process is unchanged as speed increases. Various speed plateaus are reached due to bad habits, poor writing techniques and ultimately, the limit induced by the time required to mentally convert from audio element to letter representation to written form.

Most head copy methods that you see described involve learning to recognize word code patterns rather than individual letters. Variations also include using a mental 'blackboard' to queue up letters until a word is recognized. Comprehension occurs after each word pattern is completed and recognized. These word recognition methods have been used by countless operators successfully over the years. Since the written portion of the process is removed, copy speed naturally is improved. And while I understand the concept of recognizing word patterns... I often wonder what happens when a word arrives that you haven't yet learned to recognize pattern wise? Comprehension, while vastly improved over written copy, is still stuttered. I want to be clear, I'm not saying the word pattern method is wrong or invalid. To me, it just seems less efficient (and comfortable) than the method I'm about to describe.

The Phonic Copy method can be summed up by altering Steve's concept above to read: "Code is an aural representation of a phonic sound." Each Morse Code element represents the phonic sound of a corresponding letter, not the letter itself. This means, as elements (letters / numbers) are received, they are phonically pronounced in the speech / aural portion of the mind (the auditory cortex) rather than visualized graphically as letters or whole words in the written / visual portion of the mind (the visual cortex). One universal principle to increasing copy speed is to remove the number of steps or conversions it takes from reception to comprehension. By eliminating the conversion from aural representation to graphic representation, phonic copy allows instant comprehension, many times even before a word is completed. As Drew, AE2Z aptly states: "You can

GETTING A SHACK

- At this point my only Elmer was my CWA instructor, Curt K7ZOO
- At my request, his recommendations:
 - IC-7300, Astron SS-30M, Alpha Delta DX-EE dipole (attic)
 - Daiwa CN-901, MFJ DL, RigExpert AA-230, cables etc.
- Tile roof → dipole in the attic did not work well

SOTA

- Curt explains SOTA – reaches out to W0C group
- Responses from Bob K0NR, Brad WA6MM
- W0C SOTA Dinner, Rock Bottom Brewery – March 24, 2019
 - Meet Walt W0CP, Mark N0MTN
- Walt is a neighbor – offered to survey my property and offer advice on establishing an antenna
 - → [MyAntennas.com](https://www.myantennas.com/) EFHW 80-10
 - → SteppIR DB18E on Tashjian L237 35' tower



SOTA CHASING – YOU HAVE TO BEGIN SOMEWHERE

- The motivation to continue the effort to improve my code skills
- Your callsign – sending/recognizing
- Anatomy of the chase:
 - Send: my callsign
 - Activator: sends my callsign – ??? Jumble jumble??? – K
 - Send: RR 5NN 5NN K
 - Activator: ??? Jumble jumble ??? – K dit dit
 - Send dit dit



Summits On The Air

Shack Sloth

THIS CERTIFICATE IS AWARDED TO

Jerry Kirshenbaum
KOES

In recognition of his achievement
1000 points in the Chaser Section

All CW



Barry Harding GM4TOE
Barry Harding Awards Manager

Qualifying date: 3 Jul 2020
Certificate number: SC-1000-435

JUMBLE JUMBLE

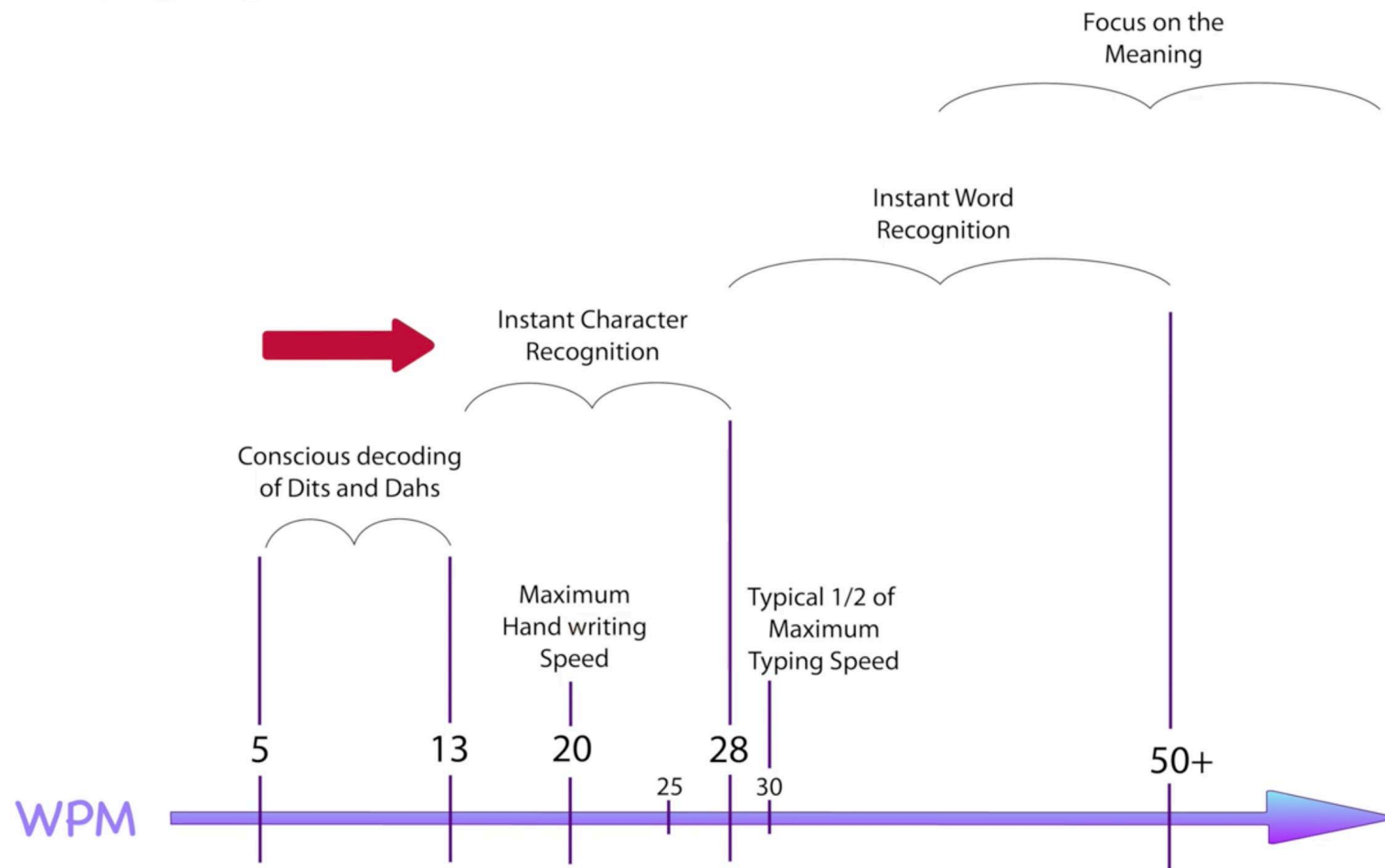
- Don't wait until you're proficient at 20 wpm to get on the air
- Over time you fill in the blanks and the “jumble jumble” part shrinks as you copy more and more
- “Jumble Jumble” is a permanent element of CW
 - There's always someone who can send faster than you can copy

CW ACADEMY EVOLUTION

- Level I, II, III
 - Mar/Apr 2019 Level II
- Level I, II, Intermediate, Advanced
 - Sept/Oct 2019 Intermediate
- Beginner, Basic, Intermediate, Advanced
 - Jan/Feb 2020 Intermediate



Speed vs Proficiency



SEE ONE, DO ONE, TEACH ONE

- CWA needed instructors and reached out to former students
- Now I teach the Beginner Level
 - Sept/Oct 2020 4 students – all went on to Basic
 - Jan/ Feb 2021 5 students (all Extra) – all progressing

SENDING/COPYING – DIFFERENT SKILL SETS

- Sending and copying are 2 separate skills once you know the code
- Sending – originates in your brain, message to fingers, you know what you're sending, you set speed – varying level of skill depending the key used (paddle, straight, bug, cootie)
- Copying – all bets are off – depends on skill of sender, speed, atmospheric conditions (QRM), sensitivity of radio and your ability to tune it

CW – 2 AVENUES

- Contests

 - Callsigns – random characters

 - Precise – no room for error

- Ragchew

 - Words, phases, thoughts

 - can fill in the blanks

CONCLUSION

- Ham Radio is replete with opportunities for brain stimulus
 - learning Morse Code as 2nd language
 - SOTA – MC plus physical activity
 - learning/building EFHW – resonant traps – oscilloscope, signal generator
 - FT8 + WSJT → learning/using Raspberry Pi → learning Linux
 - Building kits → learning/using 3D printer - cases for kits, platform for transformer
- Best of all – I've have developed wonderful new friendships and meet some really interesting fellow hams along the way

FINAL COMMENT

- My primary Elmers

CWA: K7ZOO Curt, NU7Y Quinton, K0MP Bill

W0CP Walt

K1JD John

Some of you: KX0R

- If I knew retirement could be this great, I would have skipped working

