



Directionally Challenged

Left to Right and Right to Left Scripts in Aleph

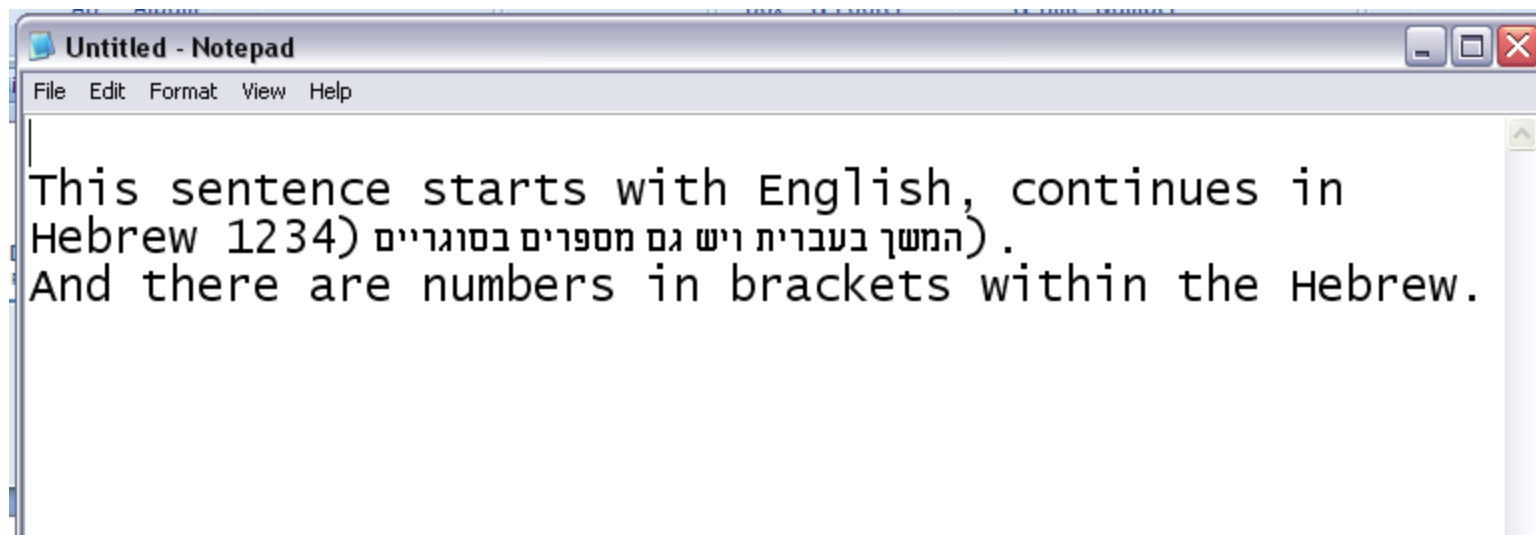
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IGELU, September 2010

The Challenge

- Left to Right scripts (Latin, Greek, modern CJK)
- Right to Left scripts (Hebrew, Arabic)
- Numbers / digits and punctuation can occur in either context
i.e. “neutral” or “ambivalent”





The solution – Define direction

- Word processors and other common programs
- HTML / XML
- In Aleph



Solution in Word processors and other common programs

- Buttons to define direction of paragraph



- Direction is not the same as alignment



- LtoR, aligned to left

Example of a Hebrew quote "ציטוט" in an English sentence. ¶

- LtoR, aligned to right

Example of a Hebrew quote "ציטוט" in an English sentence. ¶

- RtoL, aligned to left

in an English sentence. ¶ Example of a Hebrew quote



Solution in HTML

- attribute `<dir = ltr>` or `<dir = rtl>`
- preferably defined in style sheet (CSS)
- not same as alignment `<align = ltr>` or `<align = rtl>`

Authoring HTML: Handling Right-to-left Scripts

<http://www.w3.org/TR/i18n-html-tech-bidi/>



Aleph 500 - Solution ?

- Alignment defined by “alpha”

<i>Main title</i>	<u>245</u>	<u>10</u>	<u>a</u>	ירושלים - עיר נושקת אור /
			<u>c</u>	מבוא היסטורי - מרדכי נאור ; עריכת מסלולים
				ואתרים - ברוך גיאן.
<i>Varying title</i>	<u>246</u>	<u>1</u>	<u>i</u>	On verso of t.p.:
			<u>a</u>	Jerusalem - a city embracing light /
			<u>g</u>	Mordecai Naor.

```
002559813 1001 H $$$מרדכי נאור, $$$d1934-
002559813 24510 H $$$עיר נושקת אור / $$$cמבוא היסטורי - מרדכי נאור ; עריכת מסלולים
ואתרים - ברוך גיאן.
002559813 2461 L $$$on verso of t.p.: $$$aJerusalem - a city
embracing light / $$$gMordecai Naor.
```

- To change “Enter Text Mode” (F12)
- Logical order - indexing and retrieval



Direction of text in Unicode

- Three categories of bidirectional character types:
 - **Strong** (letters of alphabets, punctuation specific to script)
 - **Weak** (numbers / digits, number separators, non breaking space, formatting and control characters)
 - **Neutral** (spaces, paragraph separators, line breaks)
- Directional formatting codes
 - Determine direction of surrounding text
 - Within paragraph or line
 - Not displayed

Unicode Standard Annex #9, The Bidirectional Algorithm

http://www.unicode.org/reports/tr9/tr9-11.html#Directional_Formatting_Codes



Unicode – Directional Formatting Codes

- **Explicit Directional Embedding**
Hebrew quote in English text or English quote in Arabic text

RLE	Right-to-Left Embedding	Treat the following text as embedded right-to-left.
LRE	Left-to-Right Embedding	Treat the following text as embedded left-to-right.

- **Explicit Directional Overrides**
Allow override for special cases such as part numbers, allow for nested directional

RLO	Right-to-Left Override	Force following characters to be treated as strong right-to-left characters.
LRO	Left-to-Right Override	Force following characters to be treated as strong left-to-right characters.

- **Terminating Explicit Directional Code**
Terminates the effects of the last explicit code

PDF	Pop Directional Format	Restore the bidirectional state to what it was before the last LRE, RLE, RLO, LRO.
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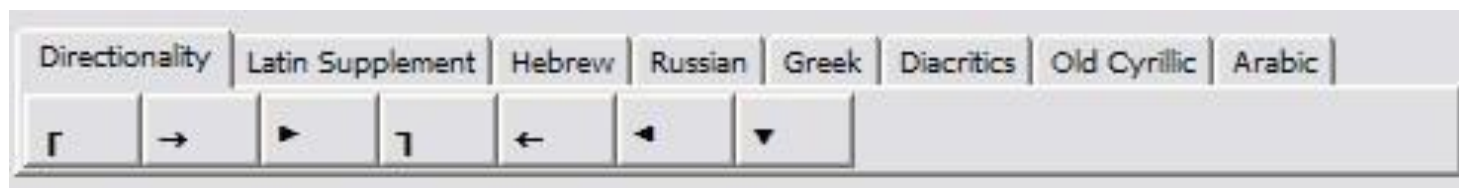
- **Implicit Directional Marks**
Very light weight, local scope

RLM	Right-to-Left Mark	Right-to-left zero-width character
LRM	Left-to-Right Mark	Left-to-right zero-width character



Directional Formatting Codes in Aleph

- Aleph 500 ver. 18+ supports Unicode directionality formatting codes
(dll files included in GUI installation)
- Added in cataloging module (floating keyboard)



- Made visible in GUI (cataloging draft) by placeholders
- Text entered in logical order, then add “directionality characters”



Setup for use of directionality characters

- Suppress for indexing

BIB library:

\$data_tab/tab_filing in all libraries

possibly \$data_tab/tab_word_breaking

possibly ADM library:

tab_filing_call_no

- Add to GUI

C:\AL500 \alephcom\tab

keyboard.ini

keyboard.txt

spacer.ini

How to control bracket and parentheses appearance in right to left display of the web

Ex Libris Documentation Center



\$data_tab/tab_filing

- \$data_tab/tab_filing

```
!Suppress directionality characters in filing
01 N to_blank          U+202AU+202BU+202CU+202DU+202E
01 N to_blank          U+200EU+200FU+001E
```

- for directionality characters within “word”

\$data_tab/tab_word_breaking

```
!remove directionality characters in word (090 and 080)
01 # to_blank          U+202AU+202BU+202CU+202DU+202E
01 # to_blank          U+200EU+200FU+001E
```

- for directionality characters in call numbers

\$data_tab/tab_filing_call_no

```
!for directionality characters in call nos
0 L to_blank           U+202AU+202BU+202CU+202DU+202E
0 L to_blank           U+200EU+200FU+001E
```



keyboard.txt



```
keyboard.txt - Notepad
File Edit Format View Help
[Directionality]
!!!!!!!!!!!!
\202A
\200E
\202D
\202B
\200F
\202E
\202C
```

[Unicode General Punctuation](http://www.unicode.org/charts/PDF/U2000.pdf)

<http://www.unicode.org/charts/PDF/U2000.pdf>

To add new tab to floating keyboard: keyboard.ini



	200	201	202	203	204	205	206
0		-	†	‰	—	○	WJ
1		ND	‡	‱	∧	※	fo
2		—	•	'	* **	%	×
3		—	▶	"	▪	~	,
4		—	•	'''	/	—	+
5		—	••	'	[⊗	
6			•••	"	}	∴	
7		≡	•	W	??	∞	
8		◀	L SEP	^	?!	∴	
9		?	P SEP	<	!?	∴	
A		→	LRE	>	⌋	•	I SS
B		←	RLE	×	⌈	••	A SS
C		◀◀	PDF	!!	◼	⌋⌈	I AFS
D		◀◀	LRO	!	▶	••	A AFS
E		→→	RLO	—	*	•••	NA DS
F		←←	NB SP	—	•	MM SP	NO DS

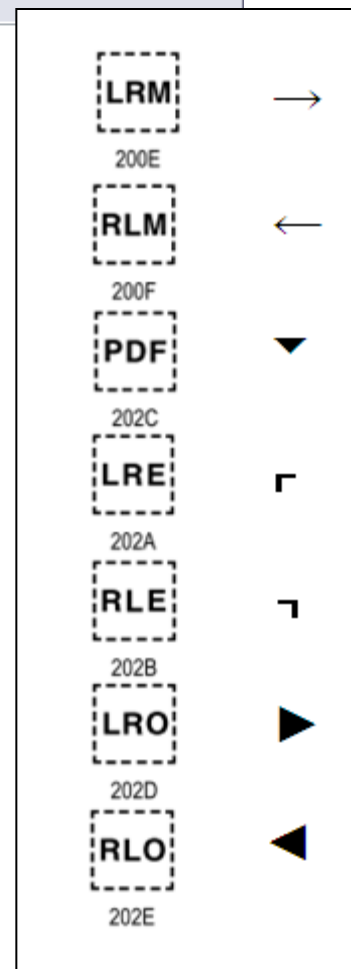
spacer.ini

```
Spacer.ini - Notepad
File Edit Format View Help

!! Spacer.ini file

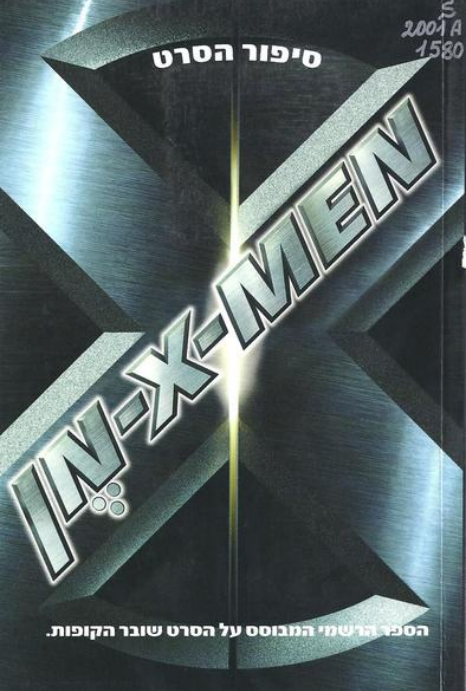
COL 1. 4; ALPHA_NUM; ;
      Spacer value;
      Hexa;
COL 2. 4; ALPHA_NUM; ;
      From Unicode value;
      Hexa;
COL 3. 4; ALPHA_NUM; ;
      To Unicode value;
      Hexa;

! 1     2     3
!!!!-!!!!-!!!!
005F 0300 0315
005F 0334 0338
005F 033D 0344
005F 0360 0361
25CC 0316 0333
25CC 0339 033C
25CC 0345 0345
2192 200E 200E  !! 200E is LEFT-TO-RIGHT MARK
2190 200F 200F  !! 200F is RIGHT-TO-LEFT MARK
25BC 202C 202C  !! 202C is POP DIRECTIONAL FORMATTING
250C 202A 202A  !! 202A is LEFT-TO-RIGHT EMBEDDING
2510 202B 202B  !! 202B is RIGHT-TO-LEFT EMBEDDING
25BA 202D 202D  !! 202D is LEFT-TO-RIGHT OVERRIDE
25C4 202E 202E  !! 202E is RIGHT-TO-LEFT OVERRIDE
```



Hebrew and English Text with Hyphens

Fixed Data	2001 A 1580	4s2000^^^^js^^^^^r^^^^^000^0^heb^d
ISBN	020927	
System Number	(C)233338028	
System Number	788NNL	
Language	37.2	
Dewey Number	78.2	n, moving pictures; Films - Specific, single films (Inc.production (s)
Local Call Number	A 1580	
Personal Number		ברגן, לרה
Main Title		: מן-MEN-X
		/ [הספר הרשמי המבוסס על הסרט שובר הקופות] / מאת לארה ברגן ; מאנגלית - רונית זק.
Varying Form		
Varying Form		
Imprint		X-מן : [תל אביב]
		נדפסו אפרונות - ראש 1



: מן - X - MEN

מן - MEN - X

↑

3 1 2



<i>Fixed Data</i>	<u>008</u>	—	—	071214s2000^^^^is^^^^^^r^^^^^000^0^heb^d
<i>ISBN</i>	<u>020</u>	—	a	9654820927
<i>System No.</i>	<u>035</u>	—	a	(OCoLC)233338028
<i>System No.</i>	<u>035</u>	—	a	2077788NNL
<i>Language Code</i>	<u>041</u>	—	a	heb
<i>Dewey No.</i>	<u>082</u>	—	a	791.437.2
			b	Motion, moving pictures; Films - Specific, single films (Inc.production scripts)
<i>Local Call No.</i>	<u>090</u>	—	a	2001 A 1580
<i>Personal Name</i>	<u>100</u>	1	a	ברגן, לרה
<i>Main Title</i>	<u>245</u>	10	a	: מן-X-MEN
			b	/ [הספר הרשמי המבוסס על הסרט שובר הקופות]
			c	מאת לארה ברגן ; מאנגלית - רונית זק.
<i>Varying Title</i>	<u>246</u>	33	a	X-Men
<i>Varying Title</i>	<u>246</u>	33	a	מן-X
<i>Imprint</i>	<u>260</u>	—	a	: [תל אביב]
			k	ידיעות אחרונות - ראש 1

1. Messages | 2. Tag Information | 3. **Browser** | 4. HOL Records | 5. Objects

Main Entry	ברגן, לרה
Title	מן-X-MEN : [הספר הרשמי המבוסס על הסרט שובר הקופות] / מאת לארה ברגן ; מאנגלית - רונית זק.
Alternate title	X-Men
Imprint	[תל אביב] : ידיעות אחרונות - ראש 1, 2000.
Filing Place	תל אביב
Descr.	154 ע' ; 19 ס"מ.
Gen. Note	בראש המעטפת: סיפור הסרט.

LtoR starts with Hebrew, Punctuation

<i>Leader</i>	<u>LDR</u>	—	—	00000nam^a22^^^^^u^4500
<i>Control No.</i>	<u>001</u>	—	—	000493334
<i>Date and Time</i>	<u>005</u>	—	—	20100725143827.0
<i>Fixed Data</i>	<u>008</u>	—	—	091201s2010^^^^^^^^^^^^^^^^r^^^^^000^0^ger^d
<i>Personal Name</i>	<u>100</u>	<u>1</u>	<u>a</u>	Kottsieper, Ingo
<i>Main Title</i>	<u>245</u>	<u>10</u>	<u>a</u>	ערב und : אות
			<u>b</u>	ein Beitrag zum hebräischen Lexikon und zum Verhältnis von CD zu 1QS.
<i>Local Note</i>	<u>599</u>		<u>a</u>	JCZ
<i>Subject-Top.1rm</i>	<u>650</u>	<u>4</u>	<u>a</u>	Dead Sea Scrolls: language
<i>Subject-Top.1rm</i>	<u>650</u>	<u>4</u>	<u>a</u>	Dead Sea Scrolls: "Serekh ha-Yahad"
<i>Subject-Top.1rm</i>	<u>650</u>	<u>4</u>	<u>a</u>	Dead Sea Scrolls: "Damascus Document"
<i>Host Item Entry</i>	<u>773</u>	<u>0</u>	<u>t</u>	Revue de Qumran
			<u>g</u>	24,3 <95> (2010) 405-419
<i>Source - Jm</i>	<u>920</u>		<u>a</u>	Revue de Qumran. Paris
<i>Elec.Loc.Acc</i>	<u>856</u>	<u>42</u>	<u>u</u>	http://libnet.ac.il/~libnet/pqd/opac_uls.pl?0633836
			<u>z</u>	Display ULS record for this journal



<i>Personal Name</i>	<u>100</u>	<u>1</u>	<u>a</u>	Kottsieper, Ingo
<i>Main Title</i>	<u>245</u>	<u>10</u>	<u>a</u>	ערב und אות → :
			<u>b</u>	ein Beitrag zum hebräischen Lexikon und zum Verhältnis von CD zu 1QS.

Author [Kottsieper, Ingo](#)

Title [: ein Beitrag zum hebräischen Lexikon und zum Verhältnis von CD zu 1QS](#) ערב und אות

in some cases more than one directionality character is necessary:

<i>Personal Name</i>	<u>100</u>	<u>1</u>	<u>a</u>	Kottsieper, Ingo
<i>Main Title</i>	<u>245</u>	<u>10</u>	<u>a</u>	ערב → and אות → :
			<u>b</u>	ein Beitrag zum hebräischen Lexikon und zum Verhältnis von CD zu 1QS.

Author [Kottsieper, Ingo](#)

Title [: ein Beitrag zum hebräischen Lexikon und zum Verhältnis von CD zu 1QS](#) : ערב und אות

English and Hebrew Characters, Numbers, Brackets and Parentheses in Call Numbers

2	‫H09 (הו)→	
1	‫H09 (יון)→	
3	‫H09 (ספ)→	
1		‫H09 ((ספר
1	‫H09 (ספר)→	
1	‫H09 (צפ)→	
1	‫H09 (צר)→	

4	‫296.76 (תו)→	
3	‫296.76 (תי)→	
1	‫296.76[83] (פר)→	
1		‫296.76[83] ((פר
1	‫296.760.22	



Dewey No. 082 a ׀E115 (תל אביב)022

Dewey No. 082 a ׀E115 (תל אביב)→022

Structure of call numbers has a constant pattern,
therefore one can make rules / algorithms to add directionality characters globally:

30 IF field begins with number or with Loazi character = E or H

1 AND

4 has Hebrew in parentheses followed by number = (עברית) number

3 OR Hebrew in parentheses followed by number in square brackets =

4 (עברית) [number]

1 ADD 200E → after closing parenthesis

1

2

1

2

׀E115 (תל אביב)→

׀E115 (תל אביב)→ [301.24]

׀E115 (תל אביב)→ [711]

׀E115 (תל אביב)→ [83]

׀E115 (תל אביב)→022

׀E115 (תל אביב)→025

׀E115 ([83]) (תל אביב)

׀E115 (תל אביב)(אוניברסיטת תל-אביב)

׀E115 (תל אביב)(ביה"ס שבח-מופת)

׀E115 (תל אביב)(בית הקברות טרומפלדור)



Directionality characters in Z30_CALL_NO

- Copy Call No from BIB to HOL and from HOL to Item
- Setup:
\$data_tab/tab100 in XXX50 and XXX60

```
!  
!# X852-ITEM-OVERRIDE  
!# Values:Y N Default: Y  
!# Type: Text; Max Length: 01  
!# tab100 of library: Yes; tab100_<server_type>: No.  
!  
! Y = item location subfields (sublibrary, collection,  
! call no.) are updated from the 852 field of the linked  
! HOL record. The line  
! setenv correct_852_subfields  
! in aleph_start controls which 852 subfields update  
! the Z30 (item) location fields.  
! "Y" must be set in both the xxx50 and xxx60 libraries.  
!
```



\$ alephe_root/aleph_start

```
setenv correct_852_subfields "2hijklm"
```

\$data_tab/tab100 in XXX60

```
!# CREATE-852-HOL  
!# Values:Y N Default: N  
!# Type: Text; Max Length: 01  
!# tab100 of library: Yes; tab100_<server_type>: No.  
!  
! * Applicable only to the HOL library (USM60).  
! Y = automatic generation of 852 subfields from call  
! number fields in the BIB record (099, 098, 090, 092,  
! 096, 050, 055, 060, 070, 082, 086i)
```



Items List

Seq.	B-C	Sublibrary	Description	Call number	Collection	Status	Notes	Loans
10	671760000 01	Machon Ben Zvi		E115 →(תל-אביב-יפו) תלא [711]	1st Floor	Regular		0

Sort Options: ITEM-0

Buttons: New, Duplicate, Delete, Label, Global Changes, Bind/Changes, Completed Vols, Refresh

1. Item Display | 2. General Information (1) | 3. General Information (2) | 4. Serial Information | 5. Serial Levels | 6. HOL Links

Barcode: 67176000001 Item Status: 01

Sublibrary: YB1 Item Process Status:

Collection: LV1 Enum. Level.1 (A)(Vol.):

Copy Number: 01 Enum. Level.2 (B):

Material Type: BOOK

Hol. Link: 45973

85X Type/Linking Number: 0 Temporary Location

Call No. Type/Call No.: \$\$\$h?E115 (תל-אביב-יפו)[711]\$\$א

2nd Call No. Type/Call No.:

Description:

Buttons: Update, Save Defaults, Refresh, Subscr Defaults, Cancel



Need Directions ?



Thank You !

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